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ABSTRACT

This study was planned to design, analyze, and field test procedures for identifying those operating problems of education practitioners which may be partially solved by making recent research developments available, and to identify the specific types of substantive and methodological information which the target audiences in elementary and secondary schools and in institutions of higher learning require to make decisions about education improvements. The primary method used was the mailed survey, with some interviews, and a second questionnaire was sent to a sample of the respondents to the first, asking them to list the specific types of information needed, indicate where they have been able to obtain it, and show how useful it had been in helping them to make a decision. Results showed that the search for information is often disorganized. Larger school districts have generally adopted more innovations than smaller ones, and have better access to information, the preferred source being direct contact with personnel in other districts, supplemented by the extensive use of printed material, professional libraries, and information services. Clarity and conciseness are regarded as of primary importance. In higher education institutions special information is frequently obtained from institutions involved in similar changes, while some have set up long range planning and research activities. (MBM)

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INNOVATION PROBLEMS AND INFORMATION NEEDS OF EDUCATIONAL PRACTITIONERS

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I INTRODUCTION

Educators encounter many problems in acquiring and using the information they need for their planning, decision-making, and implementation activities. The information, especially if it concerns local school district programs, may not have been printed and distributed. Since there is a great deal of information, searching is arduous, and the necessary search and retrieval tools may not be at hand. If information can be obtained, it may be in an unsuitable format, too lengthy, or not presented in terms that can be readily assimilated or applied by local school personnel.

For these and other reasons, the U.S. Office of Education has contracted for a number of interpretive studies of educational research and development findings, the purpose of which is to assemble, assimilate, and interpret critically the available materials on a variety of educational subjects. These results of the studies are appearing in a series of reports that provide local school personnel with the information they need to plan, carry out, and evaluate their day-to-day educational operations. The reports aim at being informative, concise, evaluative, and presented in a format that allows for easy reference and general use. Dissemination programs are designed to ensure that these materials reach their intended audiences.

To date, decisions about appropriate subject areas for these studies have been made by contractors, with the approval of the Office of Education. USOE felt a need, however, to develop systematic procedures for determining on a periodic basis the operating problems of educational practitioners at levels from preschool through higher education, and the kinds and forms of information that would help to meet their requirements. In this way, future interpretive studies can be more precisely targeted for various user audiences. The present study, summarized in the last section and described in detail in substantive sections of this report, was directed to the problem of designing and field testing procedures for precise identification of problem areas and related information needs.

Objectives

The objectives of the present study were to:

1. Design, analyze, and field test procedures for identifying periodically those operating problems of education practitioners that may be at least partially solved by making available interpretations of recent research developments, and current best-practice information.

2. Identify the specific types of substantive and methodological information that the various target audiences require to make decisions about educational improvements.

Development of such methodology for determining educational information needs of practitioners on a periodic basis requires an understanding of the process of educational innovation, including those operational constraints that inhibit change. Since communications summarizing and assessing educational information are to be targeted to the requirements of specific kinds of individuals in school districts and institutions of higher education who have responsibilities for planning and implementing change, it is essential also to understand the roles and functions of such individuals as they relate to innovative activities. These are spelled out in the next section of this report. Below is a brief review of earlier studies relevant to the present methodological study.

Previous Studies

A substantial bibliography on the subject of educational information utilization and innovation was assembled and annotated by Stanford Research Institute as one part of a study performed for the Far West Laboratory for Educational Research and Development in Berkeley, California.[1]* Emphasis was on identifying the existing literature that has an operational focus. The literature on innovation, diffusion of findings, research utilization, and change strategies is voluminous, but only a little is concerned with specific decision, problem-solving, and change processes, and with the associated information needs.

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* The cited references are listed in Appendix A.

Several compendiums of educational innovations were examined. These provided indications of the areas in which practitioners are likely to need information that will enable them to decide whether or not to adopt particular innovative programs and that will help them plan and carry out the programs that are adopted. A survey of 7,000 high schools throughout the United States indicated that the most commonly adopted innovations were those associated with language laboratories, work-study programs, physics, chemistry, and team teaching.[2] In grade schools, areas of most innovation included English language arts, mathematics, reading, foreign language, and science. A study of innovation in rural schools indicated that it was manifested mainly as technological developments and correspondence courses and very little as team teaching, school aides, shared services, multiple classes, and nongraded procedures.[3]

Most studies suggest that research findings are not a major source of information and that local or informal contacts are common sources of new ideas.

A number of studies have been concerned with individual roles in change. In one study, superintendents in innovative districts were found to use more sources of information for new curriculum practices than those in noninnovative districts.[4] Principals relied heavily on their own administrative authority in making decisions and on their personal evaluations of suitability; they personally substantiated information and assessed the merit of suggested innovations.[5] In another study, the innovativeness of principals was positively related to their attitudes toward research and innovation, the availability of a means of disseminating information within the district, and the degree with which the principals' superiors used democratic procedures in reaching decisions.[6] Principals have a favorable but realistic attitude toward the professional literature. They feel that they do have authority to implement change and that they should be leaders in the process.

According to another study teachers see their primary roles as implementation, with little responsibility for planning or instigation.[7] A second study of teachers also indicated that their roles in change are small.[8] This lack of teacher interest may be due to the facts that research results and other information are not effectively communicated to the classroom teacher and that institutionalized arrangements for communication in general are poor. It is easier for teachers to participate in certain areas than in others.[9] Teachers are most likely to introduce new techniques in selecting instructional materials, supervising pupil conduct, setting classroom goals, grouping students,

and establishing promotion and grading practices. They are not, in general, concerned with the planning of buildings, class scheduling, financing, or the evaluation of certificated or noncertificated personnel.

Decision processes and their relationship to information and other variables have been the subject of a number of studies. In a study of science instruction, the levels at which various kinds of decisions are made were investigated.[10] Policy decisions about matters affecting the entire school system and about community relations are made at the administrative (superintendent) level. At the individual school level, decisions relating to that school are the primary focus. Teachers are minimal participants in decision-making. Decisions about curriculum are regarded as most important. A study that classified decisions made in administering elementary and secondary schools according to content and that specified the loci of various kinds of decisions concluded that decisions in all content areas had been made in all loci, but that the total amount of decision-making varied considerably from one level to another.[11]

School board decision-making patterns were investigated in another study.[12] For the particular board studied, the tendency was to follow the superintendent's recommendations on more than 80 percent of the agenda items. In certain matters, however, the superintendent's recommendations were questioned more frequently than in others--an indication of the areas in which the superintendent's information sources should be particularly good. These included items pertaining to buildings and properties, resignations and dismissals (but not employment), curriculum, and programs or costs.

It will be clear from the discussion above that most of the available literature has only limited relevance to the operational problems and the specific information needs of various audiences. The second part of the Far West Study[13] addressed itself to these requirements. It consisted of a survey conducted in 65 school districts in the San Francisco Bay Area, in which superintendents, district staff members, principals, and teachers were asked to indicate their opinions and perceptions on a variety of subjects. Its findings can be summarized as follows:

- The most frequently used information sources are colleagues in one's own school system, principals and vice principals, contacts at professional meetings, superintendents, and curriculum specialists. Generally these are sources close to home. At the time of the survey (1968), the least used sources were reports from federally funded R&D and information programs.

- Communications modes tend to be informal, either with colleagues in one's own system or in other school districts. However, texts and curriculum materials from outside sources may provide a basis for information exchange and interaction.

- Important problems in the utilization of educational information include interpreting statistical results of studies as a basis for adoption; understanding procedures for using information systems; and obtaining precise, structured information from school systems where change is occurring.

- Superintendents and principals have the highest levels of participation in decision-making. The pattern for district staff personnel is similar to that for superintendents. Teachers have the lowest level of participation. Superintendents and their staffs are concerned with long range planning, while principals and teachers exercise decision prerogatives in school and classroom functions.

- Of 40 educational decisions, the five regarded as most important are decisions to (1) hire new teachers, (2) terminate teaching personnel, (3) install curricular innovations, (4) recommend new curricula to higher echelons, and (5) alter student-teacher ratios.

- The greatest deterrents to effective decision-making were lack of sufficient time to study problems, excessive focus on financial aspects, need to satisfy many diverse groups, lack of qualified skills to provide research support, and failure to define goals in operational or measurable terms.

- Superintendents regard principals and vice principals, first, and teachers, second, as the leading sources of innovation in their districts. Both principals and teachers see themselves as primary agents of innovation in their school environments. Overall, however, general agreement exists among superintendents, district staff, principals, and teachers as to district sources of innovation.

- The most frequently used external source of information is programs in other school districts, although about 26 percent of the respondents indicated that they did not know what external sources were used. The four categories of personnel agree highly in their rankings of the extent to which the various external sources are used.

- Incidents in which planning broke down because of the lack or inadequacy of information were described by 121 respondents. More than 30 percent of the breakdowns were concerned with curriculum planning, and 26 percent were concerned with grouping, nongraded instruction, and individualized instruction. More information was also needed on flexible scheduling, federally-funded projects, merit systems, and building planning. Information was most lacking on reading instruction, science programs, salary schedules and performance evaluation.

Each information item under each of six areas of educational planning was rated both for its importance in planning and for the amount of difficulty experienced in obtaining it. Table 1 indicates the item regarded as most important and most difficult to obtain for each of the six planning areas.

The general conclusions of that Far West study are that instruments similar to the questionnaires used in it can identify specific, well-defined problem areas and information needs. Furthermore, the specific information needs of those in various decision-making, planning, implementation, and evaluation roles can be determined so that information content, relevance, format, and procedures can be developed to meet those needs. For example, information must be provided to an interacting system and not just to various kinds of individuals, since it seems clear that many people participate in varying degrees in planning and problem-solving processes. Content and format must be appropriate to group procedural use as well as to individual application.

A second study, which SRI is conducting for the National Center for Educational Statistics, concerns needs for statistical information. A part of that study is a comprehensive survey by mail and interview of the educational information needs of practitioners at all levels, from preschool to higher education, and of individuals in education-related activities such as publishing, construction, and legislation. More than 6,000 individuals are being surveyed. The questionnaire and

Table 1

INFORMATION ITEMS REGARDED AS MOST IMPORTANT
AND MOST DIFFICULT TO OBTAIN*

Educational Planning Area	Information Highest in "Importance"	Information Most "Difficult to Obtain"
Curriculum planning and development	Effectiveness of current curriculum	Validation of new curriculum before its adoption
Adopting new methods of instruction	Requisite teaching and administrative skills	Time and effort required for teacher retraining
Evaluating the educational program	Identifying objectives in measurable terms	Identifying objectives in measurable terms
Planning new buildings	New directions in which education is moving	Opportunities for research studies
Appraising teacher or administrator effectiveness	Criteria for an effective appraisal system	Comparability of job assignments for purposes of appraising differences in effectiveness
Grouping, promotion and grading practices	Effects on students with respect to maturation, achievment, fast learners	Later academic success of students exposed to innovative methods of grading or grouping

* Source: Reference 13.

interview instruments are based on a detailed inventory, or taxonomy, that has been developed for educational information needs. The general categories are pupil/student information, staff information, financial information, facilities and equipment information, curriculum and instruction information, institutional characteristics, community characteristics, program information, and library information. Under each of these general categories, needs have been further classified in specific, well defined terms.

About 100 interviews have been conducted. Respondents have indicated currently unmet needs and future needs for educational statistical information. The needs most prominently mentioned were for information on student attitudes and achievements, differential staffing patterns, differentiated teacher roles, administrative practices, staff salaries, staff attitudes, curriculum evaluation, innovation, community characteristics, minority groups, families, and socioeconomic status measures other than income. A need for cost/benefit and longitudinal information was also expressed.

II ROLES, FUNCTIONS, AND OPERATIONAL CONSTRAINTS OF INFORMATION USERS

Some of the roles, functions, and operational constraints of information users have been identified in the studies already cited in the Introduction to this report. Analysis of that material as well as some additional research provides further insights on the subject.

Elementary and Secondary Education

The roles of various individuals in public elementary and secondary education are reasonably well defined and the administrative structures are fairly similar throughout the United States. It should, therefore, be possible to determine how each significant role relates to decision-making, planning, and implementation for innovative change and how individuals in various categories acquire and use information in this process. The roles have been examined in numerous studies in recent years, and dynamic descriptions of structures and functions are beginning to emerge.

Superintendents

Superintendents are the key individuals in the process of change in most school districts. Policy decisions are made by school boards but, in most cases, board members tend to rely on advice and recommendations from their superintendents. The information needs of superintendents are very diverse, because their functions are diverse. When change in any facet of the educative process is needed or desired, the district superintendent is almost always involved in one way or another.

Superintendents in innovative districts differ in some respects from those in less innovative districts.[4] In the former, they (1) use more sources of information for new curriculum practices; (2) have more years of experience as educators; (3) involve the teaching staff more widely in curriculum change; (4) recognize the worth and dignity of their staffs more; (5) have more education beyond the bachelor's degree; and (6) read more professional journals.

SRI's study for Far West[13] indicates that superintendents perceive themselves as heavily involved in a substantial range of policy, decision, planning, and implementation functions, where heavy involvement is defined as ranging from service on formal groups or committees submitting recommendations to having been given formal authority to make decisions or develop policy. Their highest involvement is in:

- Determining educational needs in the general area served by the school system
- Evaluating the educational program
- Curriculum planning and development
- Appraising teacher or administrator effectiveness
- Organization and content of the curriculum.

All of these activities either require the provision of information to the superintendent or make its availability highly desirable. Superintendents' lowest levels of involvement have to do with the individual school or classroom, such as scheduling and room and class assignments. These are areas in which outside information is not required to any great extent.

District Staff

The size and diversity of district staffs vary enormously, of course, because of great differences in enrollment totals and financial resources. Certain staff categories are often represented even on smaller staffs, however. These include curriculum and instruction specialists or consultants and administrative, business or financial aides. The Far West[13] study indicates that, to provide support to the superintendent, which is the primary role of such individuals, and to principals and teachers, a strong secondary role, they should have access to a wide variety of information. The information needs of these staff members may be greater than those of any other category of personnel because, in the nature of their work, they may be asked to acquire, evaluate, and summarize relevant information that cannot, because of time and other pressures, be adequately considered by the superintendent. Their areas of heaviest involvement tend to overlap with those of superintendents, as would be expected:

- Curriculum planning and development
- Organization and content of curriculum
- Establishing educational objectives
- In-service education and teacher orientation
- Selection of instructional supplies
- Evaluating the educational program.

Again as in the case of superintendents, areas of least involvement for district staff members are those concerned with the individual school or classroom, including scheduling, building rules and regulations, and room or pupil assignments.

Principals

Principals have a very significant role in promoting and influencing innovation. According to one study[14] the amount of staff inventiveness is clearly related to the staff's perception of the principal's support of innovative teaching. The principal must accurately perceive the skills, feeling, and values of his staff if he is to implement change successfully. Another study[6] indicated that innovative principals have positive attitudes toward research and innovation (and feel that their superintendents do as well) and favorable but realistic attitudes toward the professional literature. They also feel that they have authority to implement change and that they should be leaders in the process.

Principals see themselves as having very significant roles in many areas of educational practice in their schools.[13] They feel that they have been given formal authority to make decisions and develop policy in many areas and they serve on formal groups or committee to formulate recommendations in many others. Areas of heaviest involvement include:

- Room assignments
- Determining daily schedules for their building
- Building rules and regulations

- Scheduling of supervisory duties such as playground and after school

- Assignment of children to various classes, sections or teachers.

It is not entirely clear how the principal's natural focus on the individual school relates to his information needs. It would appear, however, that for many of the most significant functions, the need for outside information is small. Where such information is required, principals might be expected to call upon district staff members to provide it.

Principals have the least involvement in:

- Determining means of financing school expansion

- Determining the adequacies/inadequacies of graduates going to higher institutions

- Planning proposed new buildings and additions

- Planning school plant expansion

- Salary scheduling.

Day to day operations rather than long range planning are the basic business of the principal. Clearly, however, principals would be expected to have a very significant effect on the implementation of change and innovation in their own schools, and for this they may need information not always readily available to them.

Teachers

The role of the teacher is, of course, classroom instruction and the planning of such instruction. Since it is in the interaction of teacher with child that education occurs within the formal structure of the school system, and since many innovations are reflected only at the classroom level, it is clearly of primary importance that the teacher be provided with information relevant to her job in usable form. Many teachers feel that they are not as heavily involved in educational decision-making as they should be. One study[7] indicated that teachers see their principle role as implementation with little involvement in planning and instigation, although they generally favor innovation. Adequate

teacher training, guidance, time, and resources were regarded as essential to successful implementation as well as to the development of security feelings and satisfactory interpersonal relations. In-service education, supervisory help, and administrative guidance were thought to be of little value in implementation.

Another study[8] saw the teacher's role in innovation as being small, with the feeling that this resulted from a lack of effective communication of research and innovative practices to teachers.

The SRI-Far West [13] study indicates that teachers see themselves as providing advice when asked in most areas, with heavier involvement in only a few:

- Determining method of instruction within the classroom
- Determining the schedule in the teachers' own room
- Selection of instructional supplies
- Grouping, promotion, and grade-reporting practices
- Curriculum planning and development.

With the exception of curriculum planning and development, which is a concern of all personnel categories, the teacher list does not overlap with any of the others. This situation is further reflected in the list of areas of least teacher involvement which includes financing plant expansion, developing budgets, selecting teachers, and others of primary concern to superintendents and staff members.

Teachers' information needs appear to be primarily in classroom practice and curriculum. These are the areas in which it is often difficult to find information and to provide it in usable form.

All Roles

The range and diversity of roles suggested by the discussion above for elementary and secondary school personnel, indicate clearly that the potential audience for information is enormous and that it should be extremely varied in content and format if the needs are to be met. This is not to say that effective planning, decision-making, and implementation are not being done, even in the absence of some significant information,

but only that all of these processes might be improved if information system components were more effectively targeted to users' needs.

Constraints

There are a variety of constraints affecting the ability of local school district personnel to function effectively. Many of these reflect a direct lack of information and might be loosened if informatiion could be provided. They include even such things as financial and budget constraints, since information may aid in making more effective use of the resources available. Community and school board efforts to resist innovation may also be ameliorated if adequate and timely information can be provided to those groups. However, although information may be a necessary condition to successful programs of innovation and change, it is obviously not a sufficient condition in most instances because there are many other constraints to which information may apply only in limited ways or not at all.

Limitation of financial and other resources is the primary constraint on local school operations. The institution of any change usually entails added costs, at least during the shakedown period. In many cases, boards are unable or unwilling to obtain the extra money required. Enrollment size is also a limiting factor, since small districts usually have only a few or no district staff members who can devote the necessary time to obtaining and digesting information and assisting in implementing innovative programs. This constraint may be mitigated if county or state offices can provide services, but this is not always possible either.

The attitudes of the public, of school boards, and of teachers and other staff members may also limit the ability of a district and its superintendent in bringing about change. Public involvement in education has increased a great deal in recent years and the public may be unwilling to support change, especially if it is ill-informed about the nature and effects of the particular innovations proposed. School boards reflect general public attitudes and have the added problem of responsibility for providing financing. Information may have considerable value in facilitating the overcoming of public and board objections if it covers effects and costs of proposed programs.

Principals and teachers may see threats to their status, pay, and prerogatives in certain changes that are proposed and therefore resist such changes. This resistance may diminish if staff members are involved in decision and planning processes and if they are informed as to effects on their own positions.

Generally, change is facilitated and constraints limited if the change is perceived as a response to a local problem and not something instituted only for the sake of change. There is a bandwagon tendency in education, as in many other fields, such that many districts may want to adopt an innovation only because they know it has been adopted elsewhere and they do not wish to fall behind. When this happens, there may be strong local resistance and further, those innovations that are adopted may not be continued successfully. The result is a waste of time and resources. Here again, the provision of information, particularly if it concerns local experience, can be invaluable in decision-making and planning.

There are constraints on the obtaining and use of educational information itself. These include lack of understanding of the procedures for getting material from information systems, inability to obtain structured information from school systems where change is occurring, difficulty in interpreting statistical and other findings of research studies in operational terms, and lack of sufficient time to study problems and digest information.

Higher Education

Roles in innovation and change and in information use relating to those processes are not well defined in higher education. There is enormous variation from institution to institution. The president or other chief executive officer of any instutution is always a key figure but, especially if the institution is large, the level of his involvement in planning, implementation, and even decision-making may be relatively small. He always has overall responsibility, subject to policy set by his board of trustees or regents, and he must evaluate recommendations from faculty or other staff, but time may not permit much day to day involvement in the change process.

Vice-presidents for academic or business affairs, deans and permanent or ad hoc faculty committees or other groups are likely to be involved in change processes, but the degree and kind of involvement varies widely from institution to institution so that few general statements can be made on the subject.

It appears that information should be provided to the office of the president and directed by that office to the appropriate individuals in the institution who may have a need for it. Individuals in higher education may be more accustomed than those in elementary and secondary

education to searching for and interpreting information and will, therefore, know where and how to seek it out when there is a need.

Many of the constraints on change and on information search and use that exist in elementary and secondary education also exist in higher education. The primary one is financial. To cope with this, institutions need specific cost information from comparable schools, but may find it very difficult to obtain. The tendency seems to be to make direct contact with someone on a comparable campus who is expected to have the information needed. Public, board, and faculty attitudes may have a great influence on willingness and capability for change, and properly formulated information can facilitate attitude change in all of these bodies.

Student attitudes need to be considered separately, since the impetus for change often comes from the student body. Too often, however, that body is ill-informed about cost and other considerations that the administration and faculty must consider in decision-making and planning. The provision of information and the involvement of student groups in decision-making, planning, and implementation appear to be the significant factors in overcoming this constraint.

It is clear that information requirements are extremely diverse. Information is currently being derived from sources that range from rigorous research studies and statistics to anecdotes. Users are as diverse as the information sources they use. New ways of handling this diversity must be developed, and properly focused interpretative studies appear to be a promising method for developing them.

III METHODOLOGY OF THE SURVEYS

The problem presented for the current study was twofold. First, it was necessary to devise an economical and effective technique for determining, on a periodic basis, what topics are of current and primary concern in the elementary and secondary, and higher education communities so that USOE's targeted communications program can be directed to fulfilling the greatest needs for information. Second, in order to further focus those communications, it was necessary to test methods for specifying information content for maximum user benefit.

Survey of Innovative Programs

The two basic survey techniques are (1) the mailing of information gathering instruments to a sample of respondents, who are asked to fill them out and return them by mail, and (2) various direct contact methods including in-person or telephoned interviews, and discussion panels assembled at one or more locations to discuss the topics of interest. Combinations of these techniques, such as delivery of questionnaire instruments in person, with a brief discussion of purposes and return of the instruments by mail, or telephone discussions of a mailed questionnaire before or after it is filled out are also used. A particular survey may, of course, employ more than one method to obtain the information needed.

Consideration was given to all of these methods before selecting one for field testing. Mail techniques are the most economical in most instances. They permit the gathering of information from a large sample of respondents without investments of time and money in travel. Instruments can be designed to provide unambiguous responses, and such responses can be summarized and treated statistically, using either manual or machine processing methods. Mail methods do not permit probing questions in depth without losing some of their economy in processing, and they do not permit interchange of ideas between surveyer and respondents.

Direct contact methods are appropriate and may be necessary if the topics to be considered are complex and deep probing is necessary for their explication. In addition, they permit a dialogue between researcher and respondent that may result in a better understanding of the area under

consideration. Such methods are, however, costly in time and funds unless they can be carried out in a single or only a few geographic areas, since interviewers or respondents must travel. Scheduling is often difficult, particularly in the latter case. Interviewers must be trained to ask questions in a standardized way so that answers can be compared and summarized. Interview sessions are difficult to control and can easily depart from the topic, in which case the results may be interesting, but are often incomplete or partially irrelevant. Panel sessions are even more difficult to focus on specific areas of concern and their results usually cannot be summarized in any structured and systematic way.

Telephone interviews are much less costly than those in person, but they present the same problems of completeness, relevance, and comparability. In addition, many respondents are not comfortable with lengthy telephone interviews, and both quantity and quality of responses is affected by this discomfort.

For the survey of topics and areas of concern to educational practitioners, it was felt that a mail technique would be appropriate for the following reasons:

- School districts and institutions of higher education of varying size and other characteristics, in urban, suburban and rural settings throughout the United States should be included in the sample to ensure comprehensive assessment of areas of concern, and this could only be accomplished efficiently by mail

- Costs of the mail survey would be minimal and the information received maximal for these costs

- The mail survey would help ensure timeliness of information, since it can be conducted and processed in a relatively brief period

- The initial survey did not require exploration of topics in depth, but only simple statements of interest in topics that could be titled briefly and unambiguously

- Respondent time to complete the required task could be minimized

- Future surveys using the mail technique developed by the study or an appropriate modification could be carried out by USOE or its agent without heavy commitment of funds, time or skilled personnel.

Format was the next consideration. Questionnaire and questionnaire items should be brief, simple, and unambiguous. They must, of course, cover the subject adequately within the framework of the goals of the study in which they are to be used, but given that limitation, it is highly desirable that respondents--many of whom are inundated with requests for information--be given a clearly-defined task that they can accomplish with minimal disruption of their normal routines. Brevity, simplicity, and clarity also facilitate the tasks of processing and interpreting the results.

Initial consideration had been given to asking respondents to indicate areas of change or innovation in which their districts or institutions were interested, with a further request in the same questionnaire, that for those topics in which they indicated interest, they would also indicate the specific kinds of information needed in their decision-making, planning, and implementation activities. This procedure was rejected mainly because it was feared that many respondents might indicate such a large number of areas of interest, that a requirement to specify information needs for all of them would be excessively burdensome. A two-phase procedure was, therefore, decided on.

The first phase consisted of a two-page questionnaire, the first page of which was instructions for completing the task and a brief description of its purpose, and the second of which contained blanks for identifying information and a list of brief titles of innovations or programs. The focus was on innovations or changes, because it is when new programs are contemplated or adopted that information is needed for decision-making, planning, and implementation. By definition, any program that is new to a particular district or institution is considered innovative, even though its use may have been widespread in other districts or institutions for substantial periods of time. A list of some 70 innovations or new programs was compiled for elementary and secondary education, and another list of approximately the same length for higher education. Space was also provided for topics not on the list to be added by individual respondents.

Two columns were provided after the lists of programs. In the first column, respondents were asked to indicate, by a checkmark, those programs their district or institution had adopted in the previous five years. In this category they were to include pilot programs and programs that might have been adopted but subsequently dropped. In the second column, respondents were asked to check any program that was under serious consideration for adoption. Checks were to be in one column or the other, but not both, and of course, neither column would be checked if the particular innovation had not been adopted or considered. The Phase 1 questionnaire is shown in Appendix B.

Tabulations of the returned forms would indicate frequency of adoption and consideration of adoption in the districts and institutions surveyed for each of the programs listed. In determining topics for targeted communications, the USOE would, presumably, want to give first consideration to those showing higher frequencies in the category "considering adoption" since it is for these areas that information would probably be most needed. Topics showing a high frequency in the "adoption" category but low frequencies for consideration would be less appropriate for targeted communications, although implementation may take several years and information may still be needed in later stages. Low frequencies in both categories would indicate a small need for information at the time of the survey.

Sampling Procedures

Sampling procedures for elementary and secondary, and higher education were different, as discussed below.

Elementary and Secondary Education. In the case of elementary and secondary education, it was felt that certain district characteristics might be relevant to information needs, and that the sample should include a sufficient number of districts possessing each characteristic to permit separate summaries and analyses for each subsample. The characteristics considered were: (1) enrollment size, (2) cost per ADA, (3) urban, suburban and rural environments, and (4) district staff size. However, our previous work had indicated that, in the San Francisco Bay Area at least, information requirements did not seem to vary significantly with differences in any of these characteristics. Further, the cost per ADA might be defined and computed in such differing ways in different parts of the country that comparisons would not be meaningful. Also, many districts might have difficulty in classifying themselves as "urban," "suburban" or "rural," so that these categories would have little meaning. Finally, district staff size is generally highly correlated with enrollment size. Enrollment size was, therefore, adopted as the only classification variable and the sample was stratified in those terms. However, the size of the total sample was large enough to ensure that all the other district characteristics would be represented in it.

The sample was chosen from a directory published by the National Center for Educational Statistics listing all public school districts in the United States by state.[14] The same publication provides tables indicating the number of districts in each of eight enrollment size

categories, the number of students served in each of those categories, and the proportion these students are of the total. Data from these tables are presented in Table 2, along with the number of districts sampled in each category. It was decided to eliminate the smallest category--districts with 300 or fewer pupils--from our sample on the grounds that such districts are so small as to have only very limited capability and resources to innovate and that they serve only 1.7 percent of the pupils in the United States. All other size categories are represented by samples ranging from 159 to 177 districts. As the Table indicates, the samples are not proportionate to the number of districts in each category. Since overall estimate of frequencies can be obtained by a weighting procedure, the sizes were based on assuring returns of adequate magnitude for analysis of each subsample. In the 25,000 and over category, all districts were included in the sample. Since there are 175 pages in the source roster, each of the other subsamples was chosen by taking one district from each page. In some categories, the first on the page in the classification was chosen, in others the second or third district. This is an essentially random procedure. The samples obtained, with a total of 1,200 districts, represented every state.

The Phase 1 questionnaire was sent to the superintendent of each district chosen on the assumption that he would direct it to the appropriate individual in his district for response. Percentage returns among the size categories ranged from 30 to 55, as indicated in Table 2, with an overall figure of 44 percent. Adequate returns for analysis were obtained from each category, so it was not thought necessary to send follow-up questionnaires.

The number of districts having adopted each innovation and numbers having considered adoption were summed for each innovation in each size category. Using the "consideration of adoption" sums, all innovations were ranked, the highest ranking ones being those most frequently checked by respondents and therefore, presumably, those on which information might be most needed. Rankings in the adoption category can also be made, of course, to indicate those innovations already adopted by substantial numbers of districts and therefore perhaps of less immediate concern for targeted communications. It may be noted, however, that even after adoption, information may be needed for implementation and modification.

Higher Education. Institutions of higher education are diverse. They differ in size, type of control (public, private, religious), student body composition, financial and other resources, types of degrees

Table 2

COMPOSITION OF ELEMENTARY AND SECONDARY POPULATION AND SAMPLE BY ENROLLMENT SIZE CATEGORY

Enrollment	Number Districts	Number Students (Millions)	% Students	Number in Sample	% Sample	Number Returned	% Returned
25,000 - Above	170	12.54	28.7%	169	99%	85	50%
10,000 - 24,999	529	7.74	17.7	177	33	97	55
5,000 - 9,999	1,083	7.45	17.1	172	16	90	52
2,500 - 4,999	1,941	6.75	15.5	177	9	84	47
1,000 - 2,499	3,500	5.68	13.0	175	5	64	37
600 - 999	2,058	1.61	3.7	174	8	61	35
300 - 599	2,581	1.12	2.6	159	6	47	30
Total	11,862	42.89	98.3	1,203		528	44

COMPOSITION OF HIGHER EDUCATION POPULATION AND SAMPLE BY DEGREE LEVEL

Degree Level	Number Institutions	Number Returned	% Returned
AA	675	228	34
BA	811	319	39
MA	710	318	45
Total	2,196	865	39

granted, and a number of other respects. The process of innovation in higher education has been slow in many institutions and the mechanisms by which innovation takes place, the roles of various individuals, and the information requirements are not well understood. Thus, the methodology needed for determining areas of interest was necessarily less clearcut than was the case in elementary and secondary education. The list of innovations was more difficult to assemble and we could devise no adequate rationale for sampling in advance. We determined, therefore, that the Phase 1 questionnaire listing innovations should be sent to all institutions of higher education in the United States. This is feasible, since there are fewer than 2,500. It was assumed that an exploratory examination of the returns would aid in categorizing the institutions and directing further examination.

A return of 39 percent was obtained. Exploratory examination indicated that the type of degree granted was probably the most significant classification for further analysis. The returns were, therefore, divided into three categories according to whether the institutions granted (1) two-year associate degrees, (2) bachelor's degrees or (3) master's or higher degrees. Each group was tabulated separately, and frequencies and ranks were prepared for each innovation within each group. As in the previous case, the higher ranking innovations under consideration for adoption are those for which information is most likely to be needed.

Survey of Information Needs

The questionnaire responses from Phase 1 resulted in priority listings of innovative areas or programs for elementary and secondary and higher education. These can provide initial guidance in the selection of topics for targeted communications. In addition, however, it is clearly desirable that those preparing targeted communications gain more specific knowledge about the types of information that may have been difficult to obtain elsewhere, but that is critical to local decision and planning processes.

For this purpose, a second questionnaire was designed to be sent to districts or institutions that indicated adoption of certain innovations in the Phase 1 form. One page was provided for each innovation. Respondents were asked to indicate as specifically as possible what types of information or data had been required in their consideration of adoption or planning for implementation of each innovation specified. They were also asked to indicate where the information was obtained by checking one of three categories:

- Obtained locally, because only local data were required
- Obtained locally, because information was not available elsewhere
- Obtained from outside sources.

Respondents were asked to assess the criticality of each item of information as well, by checking one of the three following categories:

- Must have the information to make a decision
- Should have the information for the best decision
- Would like to have the information, but it is not vital.

The heading of each sheet contained the name of the program or innovation to be considered, the district or institution name, and an identification number. A single cover page provided orientation and instructions for filling out the forms. This Phase II cover page and data form are shown in Appendix C.

The forms were designed to be used either in mail or interview procedures. The mail technique was used for the primary field test. It was supplemented by interviewing in some colleges, universities, and school districts, because it was felt that the task was less well defined than the Phase 1 task, and that direct contact might provide additional depth and richness to supplement the data obtained by mail. In addition, if respondents had not previously tried to formulate specific information requirements, interaction with a skilled interviewer might facilitate their thinking. The cover page provided general guidance as to information categories, and also asked for more specific information items that might be expected to be brought out in interviewing.

Returns were processed by grouping information items for each innovation into categories initially, and then summing the checkmarks for all items in each category. Those items that were obtained locally because only local information was required would not be of primary concern to the preparer of a targeted communication. Similarly, those obtained from outside sources would be of lesser concern because they must already have been available, although perhaps not as readily as might be desirable. Items obtained locally because they were not available elsewhere indicate the greatest need, because of the implication of inadequacy of sources. Targeted communications should concentrate on those items, therefore. Any such items that respondents feel are essential in making decisions are particularly important for inclusion in reports to be used

by practitioners, and those that respondents feel they should have for the best decision should also be included if possible. The desirable but not vital items might be included, but their absence would not seriously inhibit local operations.

Sampling Procedures

The sampling methods were somewhat different for elementary and secondary education and higher education, so they will be discussed separately.

In the case of the elementary and secondary school districts, a total of 150 returned Phase I questionnaires were selected at random from all enrollment size categories. A matrix was then created as a means of selecting the innovation information forms that each district would receive. In this case, of course, the column for innovations adopted was used, since adoption implies the search for information and knowledge of the requirements. On one axis of the matrix, the districts were listed. On the other axis, all innovations that had appeared in the highest ten ranks in at least one enrollment size category were listed. There were a total of 27 of these, indicating that a substantial number appeared in the top ten in more than one enrollment category. These are the innovations in which there is the greatest interest and for which, therefore, the information requirements should be specified. To reduce the amount of time and effort required for any one district to respond, the number of innovation information forms to be sent to each district was limited to five.

After the matrix was set up, the 150 Phase 1 questionnaires were marked under each innovation (among the 27 listed) that had been adopted by the district returning the questionnaire. When this procedure had been completed for all 150 districts, five innovations were selected from each district. A tally of the number of information forms allocated for each innovation was kept to ensure that each innovation was represented by enough districts to permit adequate analysis of the responses. In the case of the higher ranking innovations, at least 30 districts were asked to respond.

The higher education procedure was similar, but in that case, 50 returns were selected from each of the three degree-granting categories. Within each category a matrix was created with institutions arrayed on one axis and innovations appearing in the top ten of any degree classification listed on the other. Some 22 innovations were on the list

indicating, as in the case above, that some innovations appeared in the top ten in more than one degree category. The procedure followed from this point was identical with that used for elementary and secondary districts. Each institution was sent five innovation information forms. To ensure adequate returns for analysis, each innovation was represented by at least 30 information forms.

In all, about 1,500 one-page information forms were mailed, 750 to elementary and secondary districts and 750 to institutions of higher education. The returns, supplemented by material obtained in interviews, were expected to provide the necessary guidance for writers of targeted communications in focusing their work on primary information needs for the particular innovative program being covered.

The results of the Phase I questionnaire are presented in the next section; the subsequent section describes the outcome of the survey of information needs.

IV RESULTS OF INNOVATIVE PROGRAMS SURVEY

Elementary and Secondary Education

As indicated in the previous section, the sample was stratified by enrollment size categories and ranged from 159 to 177 for the six categories included. The number of usable returns ranged from 47 to 97 and the percentages returned from 30 to 55.

The returns were summarized separately for each enrollment category and then summed across all categories. Individual returns were tabulated so as to obtain the total number of districts that had adopted each innovation listed on the form and the number considering adoption of each. Innovations were then ranked, with those receiving the higher totals in the "considering adoption" category being given the higher ranks. This category was used for ranking since it indicates those innovations of greatest current and future interest and those, therefore, on which targeted communications might be written.

Tables 3 through 10 present listings of innovations in rank order by the number of districts in each enrollment category considering adoption and the total for the entire sample. The first column gives the rank, the second the number of districts indicating consideration, the third the number having adopted each innovation, and the fourth a projection of the total number of public school districts potentially interested in considering the innovation. The fourth column thus indicates the size of the possible audience for targeted communications on each innovation.

In making the projections, it was assumed that the returned questionnaires in any given enrollment category are representative of all districts in that category. For example, if 50 percent of the districts in the 10,000 through 24,999 category indicated they were considering adoption of a particular innovation, it may be assumed, within the limits of sampling error, that 50 percent of all districts in that category in the United States might be considering that innovation. There were 97 districts in that category in the return sample and there are 529 such districts in the United States. Dividing 97 into 529 gives 5.5. In the sample, there were 32 districts considering adoption of flexible scheduling. Multiplying 32 by 5.5 provides an estimated 176 districts

Table 3

RANKING OF INNOVATIVE PROGRAMS---BY NUMBER OF ALL ELEMENTARY AND SECONDARY SCHOOL DISTRICTS CONSIDERING ADOPTION

N = 528	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Drugs and Health	1	165	165	3779
Flexible Scheduling	2	148	148	3058
Family Life and Sex Education	3	136	133	2727
Individualized Instruction	4	135	140	2881
New Social Sciences	5	129	165	2800
Nongraded Procedures	6	126	192	3043
Increasing Vocational Awareness	7	117	194	2463
Program Budgeting	8	114	86	1808
Differentiated Staffing	9	109	125	1907
Establishing Educational Goals	10	107	175	2178
Program Evaluation	11	99	189	2278
Systems Analysis	12	98	45	1210
New Approaches in Vocational and Adult Education	13	96	195	2000
Information Systems	14	92	119	1241
Environmental Education	15.5	89	57	1556
Promotion and Grading Practices	15.5	89	221	1996
Programmed Learning	17	84	156	1895
Paraprofessionals, Aides, New Careers	18	78	283	1818
Team Teaching	19	77	287	2142
New English Language Arts	20	76	244	1661
New Science	22	73	296	1735
Ethnic Studies	22	73	134	1238
Merit Systems	22	73	30	1429
Instructional Technology	24	69	173	1075
Departmentalized Elementary Grades	25	68	204	1671
Simulation and Gaming	26	61	95	855
Participation of Non-Educators in School Affairs	27.5	60	192	1264
Student Behavior	27.5	60	232	1389
Dropouts	30	59	158	1024
Student Rights	30	59	105	850
Pre-Primary Programs	30	59	192	1124
Evaluation of Professional Personnel	32	58	266	1498
Discovery	33	57	172	1015
Assessment (Achievement)	35	56	187	1156
Problem Diagnosis and Definition	35	56	68	1008
Use of Community Resources	35	56	217	1405
Planning (Financial)	37	54	136	913
Programs for the Perceptually Handicapped	38	53	173	1031
Teacher Training and Upgrading	39	52	250	1433
Employer/Staff Relations	40.5	50	247	1154
Management Training	40.5	50	66	724

Table 3 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF ALL ELEMENTARY AND SECONDARY SCHOOL DISTRICTS CONSIDERING ADOPTION

N = 528	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Instructional Materials Selection	43	48	208	1296
School Board and Community Relations	43	48	173	1228
Learning Disability Clinic	43	48	108	548
Behavior Modification	45	47	83	930
Group Dynamics as a Vehicle for Supervision	46.5	46	64	922
Staff Roles and Utilization	46.5	46	129	1098
Work-Study Programs	48.5	44	297	1377
Teacher Attitudes Toward the Disadvantaged	48.5	44	154	1010
Daily Demand Scheduling	50	43	31	631
Programs for the Gifted and Handicapped	51	42	279	1140
Decision-making	52.5	41	102	817
Plant and Facilites Utilization	52.5	41	145	833
In-service Education	54	40	329	1092
Staff Size	55.5	38	209	900
Shared Services	55.5	38	127	788
New Foreign Language Approach	57.5	36	202	940
Multiple Classes	57.5	36	104	720
Values and Motivations of the Disadvantaged	59	35	99	712
Basic Concepts of American Law	60.5	34	56	692
Finance	60.5	34	168	661
Cultural Enrichment	62	33	132	749
Delinquency Control Programs	63	32	80	262
Grouping	64.5	31	305	769
Recruitment and Retention of Educational Personnel	64.5	31	182	709
New Mathematics	66.5	30	408	776
Head Start, Follow Through Programs	66.5	30	205	644
Change Agents	68	27	49	386
Guidance and Counseling	69.5	26	272	606
Integration	69.5	26	191	449
Selection of Administration and Instruction Personnel	71	25	167	462
Language Laboratories	72	24	288	801
Libraries	73	22	239	657
English for the Foreign Speaking Child	74	18	83	278
Children's Centers	75	17	44	297
Migrant Education	76	12	48	265
Open Society Education	77	11	16	150
Total			12,688	

Table 4

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 25,000 OR MORE STUDENTS CONSIDERING ADOPTION

N = 85	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Program Budgeting	1	31	22	90
Flexible Scheduling	2	28	40	81
Individualized Instruction	3	25	40	73
Family Life and Sex Education	5	24	38	70
Environmental Education	5	24	12	70
Systems Analysis	5	24	22	70
Information Systems	7	23	49	67
Differentiated Staffing	8	20	37	58
New Social Science	9.5	19	44	55
Drugs and Health	9.5	19	45	55
Simulation and Gaming	11	18	28	52
Increasing Vocational Awareness	12	17	52	49
New Approaches in Vocational and Adult Education	14	15	54	44
Establishing Educational Goals	14	15	47	44
Dropouts	14	15	47	44
Students Rights	16.5	14	29	41
Learning Disability Clinic	16.5	14	36	41
Group Dynamics as a Vehicle for Supervision	18.5	13	19	38
Daily Demand Scheduling	18.5	13	5	38
Ethnic Studies	21	12	49	35
Promotion and Grading Practices	21	12	48	35
Discovery	21	12	56	35
Program Evaluation	24	11	41	32
Departmentalized Elementary Grades	24	11	40	32
Management Training	24	11	24	32
Assessment (Achievement)	27.5	10	46	29
Problem Diagnosis and Definition	27.5	10	20	29
Programmed Learning	27.5	10	49	29
Nongraded Procedures	27.5	10	64	29
New Science	33.5	9	63	26
Participation of Non-Educators in School Affairs	33.5	9	55	26
Plant and Facilities Utilization	33.5	9	36	26
Instructional Technology	33.5	9	55	26
Delinquency Control Programs	33.5	9	39	26
Values and Motivations of the Disadvantaged	33.5	9	42	26
English for the Foreign Speaking Child	33.5	9	33	26
Paraprofessionals, Aides, New Careers	33.5	9	67	26
Basic Concepts of American Law	41.5	8	20	23

Table 4 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 25,000 OR MORE STUDENTS CONSIDERING ADOPTION

N = 85	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Planning (Financial)	41.5	8	43	23
Decision-making	41.5	8	34	23
Multiple Classes	41.5	8	29	23
Pre-Primary Programs	41.5	8	60	23
Behavior Modification	41.5	8	36	23
Programs for the Perceptually Handicapped	41.5	8	57	23
Merit Systems	41.5	8	4	23
New English Language Arts	47.5	7	60	20
Guidance and Counseling	47.5	7	51	20
Student Behavior	47.5	7	56	20
Teacher Attitude Toward the Disadvantaged	47.5	7	54	20
School Board and Community Relations	54.5	6	46	17
Change Agents	54.5	6	18	17
Shared Services	54.5	6	30	17
Employer/Staff Relations	54.5	6	55	17
Integration	54.5	6	67	17
Finance	54.5	5	40	15
Use of Community Resources	54.5	5	59	15
Team Teaching	54.5	5	72	15
Programs for the Gifted and Handicapped	54.5	5	66	15
Children's Center	54.5	5	16	15
New Foreign Language Approach	64	4	59	12
Cultural Enrichment	64	4	44	12
Instructional Materials Selection	64	4	56	12
In-Service Education	64	4	66	12
Grouping	64	4	63	12
Teacher Training and Upgrading	64	4	64	12
Staff Roles and Utilization	64	4	42	12
Migrant Education	67.5	3	10	9
Selection of Administration and Instructional Personnel	67.5	3	55	9
Open Society Education	70	2	7	6
Staff Size	70	2	52	6
Recruitment and Retention of Educational Personnel	70	2	48	6
Language Laboratories	73.5	1	73	3
Libraries	73.5	1	69	3
Head Start, Follow Through Programs	73.5	1	67	3
Evaluation of Professional Personnel	73.5	1	56	3
New Mathematics	76.5	0	74	0
Work-Study Programs	76.5	0	74	0
Total			3,445	

Table 5

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS
OF 10,000-24,999 STUDENTS CONSIDERING ADOPTION

N = 97	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Systems Analyses	1	33	11	182
Flexible Scheduling	2	32	29	176
Individualized Instruction	3	31	30	171
Drugs and Health	4	30	37	165
Differentiated Staffing	5	29	26	160
Family Life and Sex Education	6.5	27	32	149
Program Budgeting	6.5	27	25	149
Information Systems	8	25	24	138
Increasing Vocational Awareness	10	24	46	132
Instructional Technology	10	24	37	132
Nongraded Procedures	10	24	50	132
New Social Sciences	12.5	21	41	116
Establishing Educational Goals	12.5	21	42	116
Programmed Learning	14	20	31	110
New Approaches in Vocational and Adult Education	15.5	18	53	99
Planning (Financial)	15.5	18	33	99
Student Rights	17.5	17	28	94
Management Training	17.5	17	14	94
New English Language Arts	20	16	15	88
Environmental Education	20	16	36	88
Ethnic Studies	20	16	36	88
Promotion and Grading Practices	22.5	15	50	83
Program Evaluation	22.5	15	49	83
Problem Diagnosis and Definition	25.5	14	15	77
Student Behavior	25.5	15	49	83
Simulation and Gaming	25.5	14	24	77
Paraprofessionals, Aides, New Careers	25.5	14	66	77
Assessment (Achievement)	31	13	43	72
Group Dynamics as a Vehicle for Supervision	31	13	17	72
Team Teaching	31	13	69	72
Pre-Primary Programs	31	13	36	72
Delinquency Control Programs	31	13	17	72
Merit Systems	31	13	10	72
Evaluation of Professional Personnel	31	13	52	72
Participation of Non-Educators in School Affairs	36	12	48	66
Dropouts	36.5	12	43	66
Discovery	36.5	12	40	66
Departmentalized Elementary Grades	36.5	12	35	66
New Science	41	11	64	61

Table 5 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 10,000-24,999 STUDENTS CONSIDERING ADOPTION

N = 97	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Employer/Staff Relations	41	11	56	61
Daily Demand Scheduling	41	11	11	61
Teacher Training and Upgrading	41	11	54	61
Staff Roles and Utilization	41	11	34	61
Decision-making	46.5	10	24	55
Change Agents	46.5	10	16	55
Shared Services	46.5	10	29	55
Programs for the Perceptually Handicapped	46.5	10	44	55
Head Start, Follow Through Programs	46.5	10	46	55
Recruitment and Retention of Educational Personnel	46.5	10	45	55
New Foreign Language Approach	52.5	9	53	50
New Mathematics	52.5	9	79	50
Staff Size	52.5	9	48	50
School Board and Community Relations	52.5	9	42	50
Teacher Attitudes toward the Disadvantaged	52.5	9	34	50
Behavior Modification	52.5	9	16	50
Cultural Enrichment	57.5	8	37	44
Instructional Materials Selection	57.5	8	48	44
Plant and Facilities Utilization	57.5	8	41	44
Use of Community Resources	57.5	8	50	44
Work-Study Programs	61.5	7	69	39
Integration	61.5	7	44	39
Values and Motivations of the Disadvantaged	61.5	7	17	39
Learning Disability Clinic	61.5	7	31	39
Finance	65	6	44	33
Multiple Classes	65	6	27	33
Selection of Administration and Instructional Personnel	65	6	43	33
Basic Concepts of American Law	68.5	5	12	28
In-Service Education	68.5	5	76	28
Grouping	68.5	5	65	28
Programs for the Gifted & Handicapped	68.5	5	71	28
Language Laboratories	71	4	70	22
Open Society Education	73	3	5	17
Guidance and Counseling	73	3	64	17
Libraries	73	3	56	17
Children's Centers	75.5	2	15	11
Migrant Education	75.5	2	11	11
English for the Foreign Speaking Child	77	1	27	6
Total			2,972	

Table 6

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS
OF 5,000-9,999 STUDENTS CONSIDERING ADOPTION

N = 90	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Drugs and Health	1	36	27	432
New Social Sciences	2	33	24	396
Family Life and Sex Education	3	28	24	336
Nongraded Procedures	4	26	30	312
Establishing Educational Goals	5.5	25	32	300
Differentiated Staffing	5.5	25	23	300
Flexible Scheduling	7	24	28	288
Increasing Vocational Awareness	8.5	22	33	264
Information Systems	8.5	22	19	264
Individualized Instruction	10	21	25	252
New Approaches in Vocational and Adult Education	11.5	20	29	240
Systems Analysis	11.5	20	7	240
Program Evaluation	13.5	19	36	228
Program Budgeting	13.5	19	19	228
Ethnic Studies	16	18	23	216
Instructional Technology	16	18	35	216
Paraprofessionals, Aides, New Careers	16	18	49	216
New English Language Arts	19	17	45	204
Environmental Education	19	17	11	204
Programmed Learning	19	17	27	204
New Science	21	16	53	192
Simulation and Gaming	23	15	18	180
Learning Disability Clinic	23	15	19	180
Staff Roles and Utilization	23	15	23	180
Promotion and Grading Practices	25.5	14	39	168
Pre-Primary Programs	25.5	14	32	168
Problem Diagnosis and Definition	27.5	13	20	156
Discovery	27.5	13	31	156
Student Behavior	30	12	41	144
Student Rights	30	12	19	144
Use Community Resources	30	12	41	144
Group Dynamics	33	11	15	132
Behavior Modification	33	11	14	132
Evaluation of Professional Personnel	33	11	52	132
Dropouts	36.5	10	22	120
Team Teaching	36.5	10	60	120
Merit Systems	36.5	10	6	120
Management Training	36.5	10	13	120
Planning (Financial)	40	9	23	108

Table 6 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 5,000-9,999 STUDENTS CONSIDERING ADOPTION

N = 90	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Participation of Non-Educators in School Affairs	40	9	35	108
Departmentalized Elementary Grades	40	9	41	108
Basic Concepts of American Law	43.5	7	8	84
Employer/Staff Relations	43.5	7	46	84
Teacher Attitudes Toward the Disadvantaged	43.5	7	25	84
Programs for the Perceptually Handicapped	43.5	7	33	84
Cultural Enrichment	49.5	6	19	72
Instructional Materials Selection	49.5	6	44	72
Assessment (Achievement)	49.5	6	43	72
Decision-making	49.5	6	20	72
Finance	49.5	6	30	72
Shared Services	49.5	6	26	72
Multiple Classes	49.5	6	19	72
Delinquency Control Programs	49.5	6	16	72
New Foreign Language	59.5	5	35	60
Staff Size	59.5	5	43	60
School Board and Community	59.5	5	32	60
Change Agents	59.5	5	5	60
Plant and Facilities Utilization	59.5	5	25	60
In-Service Education	59.5	5	64	60
Daily Demand Scheduling	59.5	5	3	60
Work-Study Program	59.5	5	60	60
Values and Motivations of the Disadvantaged	59.5	5	17	60
Selection of Administration and Instructional Personnel	59.5	5	32	60
TeachersTraining and Upgrading	59.5	5	44	60
Recruitment and Retention	59.5	5	33	60
New Mathematics	67.5	4	72	48
Grouping	67.5	4	54	48
Programs for the Gifted and Handicapped	67.5	4	54	48
Integration	67.5	4	30	48
Guidance and Counseling	72	3	50	36
Language Laboratories	72	3	55	36
Libraries	72	3	43	36
Children Centers	72	3	6	36
Head Start, Follow Through Programs	72	3	35	36
Open Society Education	75.5	2	3	24
English for the Foreign Speaking Child	75.5	2	10	24
Migrant Education	77	1	3	12
Total			2,300	

Table 7

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 2,500-4,999 STUDENTS CONSIDERING ADOPTION

N = 84	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Drugs and Health	1	31	26	716
Program Evaluation	2	25	23	578
Family Life and Sex Education	3.5	24	17	554
Flexible Scheduling	3.5	24	16	554
Promotion and Grading Practices	5.5	23	34	531
Nongraded Procedures	5.5	23	25	531
Establishing Educational Goals	7	20	18	462
Increasing Vocational Awareness	8.5	19	25	439
Individualized Instruction	8.5	19	18	439
New Social Sciences	11.5	17	30	393
Ethnic Studies	11.5	17	12	393
Program Budgeting	11.5	17	10	393
Programs Perceptually Handicapped	11.5	17	17	393
Environmental Education	15	15	9	347
Participation of Non-Educators in School Affairs	15	15	23	347
Team Teaching	15	15	37	347
New Approaches in Vocational and Adult Education	17.5	14	26	323
Paraprofessionals, Aides, New Careers	17.5	14	41	323
New English Language Arts	19.5	13	39	300
Use of Community Resources	19.5	13	30	300
New Science	22	12	46	277
Departmentalized Elementary Grades	22	12	27	277
Differentiated Staffing	22	12	19	277
Systems Analysis	27.5	11	3	254
Information Systems	27.5	11	15	254
School Board and Community Relations	27.5	11	18	254
Employer/Staff Relations	27.5	11	35	254
Pre-primary Programs	27.5	11	25	254
Learning Disability Clinic	27.5	11	9	254
Merit Systems	27.5	11	5	254
Evaluation of Professional Personnel	27.5	11	40	254
Staff Size	32.5	10	24	231
Programs for the Gifted and Handicapped	32.5	10	34	231
Instructional Materials Selection	38	9	26	208
Assessment (Achievement)	38	9	22	208
Finance	38	9	21	208
Dropouts	38	9	20	208
In-service Education	38	9	47	208
Group Dynamics as a Vehicle for Supervision	38	9	7	208
Instructional Technology	38	9	22	208

Table 7 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 2,500-4,999 STUDENTS CONSIDERING ADOPTION

N = 84	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Work-Study Programs	38	9	35	208
Teacher Training and Upgrading	38	9	33	208
Planning (Financial)	45	8	14	185
Student Behavior	45	8	34	185
Daily Demand Scheduling	45	8	2	185
Discovery	45	8	21	185
Behavior Modification	45	8	7	185
Decision-making	50	7	8	162
Student Rights	50	7	13	162
Programmed Learning	50	7	27	162
Multiple Classes	50	7	13	162
Head Start	50	7	18	162
New Mathematics	55.5	6	59	139
Basic Concepts American Law	55.5	6	8	139
Problem Diagnosis and Definition	55.5	6	6	139
Shared Services	55.5	6	20	139
Plant and Facilties Utilization	55.5	6	20	139
Teacher Attitudes Toward the Disadvantaged	55.5	6	19	139
Cultural Enrichment	61.5	5	15	116
Grouping	61.5	5	45	116
Simulation and Gaming	61.5	5	15	116
Libraries	61.5	5	26	116
Selection Administration and Instructional Personnel	61.5	5	18	116
Staff Roles and Utilization	61.5	5	18	116
Delinquency Control Programs	66	4	5	92
Integration	66	4	19	92
Children's Centers	66	4	4	92
Open Society Education	70.5	3	1	69
Values and Motivations of the Disadvantaged	70.5	3	11	69
Migrant Education	70.5	3	8	69
Management Training	70.5	3	8	69
Recruitment and Retention of Educational Personnel	70.5	3	26	69
Guidance and Counseling	70.5	3	40	69
New Foreign Language Approach	74.5	2	23	46
English for the Foreign Speaking Child	74.5	2	8	46
Change Agents	76.5	1	6	23
Language Laboratories	76.5	1	38	23
Total			1,632	

Table 8

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS
OF 1,000-2,499 STUDENTS CONSIDERING ADOPTION

N = 64	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Drugs and Health	1	21	10	1149
Flexible Scheduling	2	20	16	1094
New Social Sciences	3	19	10	1039
Nongraded Procedures	4	18	12	984
Individualized Instruction	5	17	8	929
Family Life and Sex Education	6.5	15	9	821
Programmed Learning	6.5	15	13	821
Team Teaching	8	14	27	766
Program Evaluation	9.5	13	15	711
Departmentalized Elementary Grades	9.5	13	27	711
Increasing Vocational Awareness	11.5	12	14	656
Differentiated Staffing	11.5	12	9	656
Establishing Educational Goals	14	11	16	602
Teacher Training and Upgrading	14	11	22	602
Paraprofessionals, Aides, New Careers	14	11	28	602
New English Language Arts	17.5	10	26	547
New Approaches in Vocational and Adult Education	17.5	10	14	547
Program Budgeting	17.5	10	3	547
Use of Community Resources	17.5	10	13	547
New Science	21.5	9	29	492
Environmental Education	21.5	9	3	492
Promotion and Grading Practices	21.5	9	22	492
Evaluation of Professional Personnel	21.5	9	29	492
Assessment (Achievement)	25	8	11	438
Employer/Staff Relations	25	8	21	438
Teacher Attitudes Toward the Disadvantaged	25	8	6	438
Cultural Enrichment	29	7	6	383
School Board and Community Relations	29	7	14	383
Instructional Technology	29	7	13	383
Work-Study Programs	29	7	32	383
Programs Gifted and Handicapped	29	7	27	383
New Mathematics	39.5	6	49	328
Information Systems	39.5	6	7	328
Instructional Materials	39.5	6	13	328
Program Diagnosis and Definition	39.5	6	2	328
Participation of Non-Educators in School Affairs	39.5	6	16	328
Decision-making	39.5	6	7	328
Shared Services	39.5	6	9	328
Plant and Facilities Utilization	39.5	6	9	328
Student Behavior	39.5	6	22	328
Group Dynamics as a Vehicle for Supervision	39.5	6	2	328

Table 8 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 1,000-2,499 STUDENTS CONSIDERING ADOPTION

N = 64	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Discovery	39.5	6	9	328
Pre-Primary Program	39.5	6	17	328
Values and Motivations of the Disadvantaged	39.5	6	6	328
Merit Systems	39.5	6	1	328
Staff Roles and Utilization	39.5	6	6	328
Language Laboratories	39.5	6	28	328
Ethnic Studies	49.5	5	7	274
Planning (Financial)	49.5	5	10	274
Dropouts	49.5	5	10	274
Recruitment and Retention of Recreational Personnel	49.5	5	14	274
Systems Analysis	55.5	4	1	219
Staff Size	55.5	4	18	219
Multiple Classes	55.5	4	10	219
Simulation and Gaming	55.5	4	5	219
Libraries	55.5	4	17	219
Behavior Modification	55.5	4	4	219
Programs for the Perceptually Handicapped	55.5	4	11	219
Management Training	55.5	4	2	219
New Foreign Language Approach	63.5	3	17	164
Basic Concepts of American Law	63.5	3	4	164
Change Agents	63.5	3	3	164
Guidance and Counseling	63.5	3	29	164
Student Rights	63.5	3	6	164
In-service Education	63.5	3	31	164
Grouping	63.5	3	39	164
Integration	63.5	3	15	164
Finance	68	2	13	109
Children's Centers	68	2	0	109
Migrant Education	68	2	8	109
English for the Foreign Speaking Child	68	2	2	109
Head Start, Follow Through Programs	68	2	18	109
Selection of Administration and Instructional Personnel	68	2	10	109
Daily Demand Scheduling	74	1	4	55
Open Society Education	76	0	0	0
Delinquency Control Programs	76	0	1	0
Learning Disability Clinic	76	0	6	0
Total			1,023	

Table 9

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 600-999 STUDENTS CONSIDERING ADOPTION

N = 61	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Increasing Vocational Awareness	1	16	15	539
Nongraded Procedures	2	15	8	506
New Social Sciences	3.5	14	9	472
New Approaches in Vocational and Adult Education	3.5	14	12	472
Drugs and Health	5.5	13	11	438
Team Teaching	5.5	13	12	438
Programmed Learning	7	12	5	404
Program Evaluation	8.5	11	11	371
Flexible Scheduling	8.5	11	13	371
New English Language Arts	10.5	10	16	337
Assessment (Achievement)	10.5	10	9	337
New Science	15	9	18	303
Family Life and Sex Education	15	9	8	303
Instructional Materials Selection	15	9	12	303
Promotion and Grading Practices	15	9	13	303
Individualized Instruction	15	9	12	303
Work-Study Program	15	9	18	303
Merit Systems	15	9	2	303
Establishing Educational Goals	20.5	8	13	270
Programs for the Gifted and Handicapped	20.5	8	17	270
Teacher Training and Upgrading	20.5	8	18	270
Evaluation of Professional Personnel	20.5	8	19	270
Program Budgeting	25.5	7	3	236
Plant and Facilities Utilization	25.5	7	9	236
In-service Education	25.5	7	27	236
Grouping	25.5	7	21	236
Staff Roles and Utilization	25.5	7	5	236
Differentiated Staffing	25.5	7	7	236
Dropouts	30	6	10	202
Departmentalized Elementary Grades	30	6	18	202
Program for the Perceptually Handicapped	30	6	5	202
New Foreign Language Approach	36.5	5	12	169
Planning (Financial)	36.5	5	9	169
Staff Size	36.5	5	12	169
Problem Diagnosis and Definition	36.5	5	3	169
Participation of Non-Educators in School Affairs	36.5	5	10	169
Finance	36.5	5	14	169
Language Laboratories	36.5	5	17	169
Pre-primary Programs	36.5	5	14	169
Teacher Attitudes Toward the Disadvantaged	36.5	5	12	169
Head Start, Follow Through Programs	36.5	5	11	169

Table 9 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 600-999 STUDENTS CONSIDERING ADOPTION

N = 61	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Environmental Education	49	4	5	135
Systems Analysis	49	4	0	135
Information Systems	49	4	4	135
School Board and Community Relations	49	4	12	135
Guidance and Counseling	49	4	24	135
Student Behavior	49	4	18	135
Student Rights	49	4	8	135
Employer/Staff Relations	49	4	20	135
Discovery	49	4	8	135
Use of Community Resources	49	4	15	135
Values and Motivations of the Disadvantaged	49	4	4	135
Selection of Administration and Instructional Personnel	49	4	6	135
Management Training	49	4	3	135
Paraprofessionals, Aides, New Careers	49	4	19	135
Recruitment and Retention of Educational Personnel	49	4	10	135
New Mathematics	59	3	42	101
Multiple Classes	59	3	3	101
Simulation and Gaming	59	3	3	101
Libraries	59	3	16	101
Behavior Modification	59	3	1	101
Cultural Enrichment	65	2	6	67
Ethnic Studies	65	2	7	67
Decision-making	65	2	5	67
Change Agents	65	2	1	67
Shared Services	65	2	8	67
Daily Demand Scheduling	65	2	5	67
English for the Foreign Speaking Child	65	2	2	67
Basic Concepts of American Law	71.5	1	3	34
Open Society Education	71.5	1	0	34
Group Dynamics as a Vehicle for Supervision	71.5	1	4	34
Integration	71.5	1	12	34
Children's Centers	71.5	1	2	34
Learning Disability Clinic	71.5	1	4	34
Instructional Technology	76	0	6	0
Delinquency Control Programs	76	0	1	0
Migrant Education	76	0	6	0
Total			783	

Table 10

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 300-599 STUDENTS CONSIDERING ADOPTION

N = 47	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Drugs and Health	1	15	9	824
Individualized Instruction	2	13	7	714
Nongraded Procedures	3	10	3	549
Family Life and Sex Education	4	9	5	494
Student Behavior	4	9	8	494
Flexible Scheduling	4	9	6	494
New Foreign Language Approach	7.5	8	3	439
Paraprofessionals, Aides, New Careers	7.5	8	13	439
New Science	12	7	23	384
Increasing Vocational Awareness	12	7	9	384
Promotion and Grading Practices	12	7	15	384
Establishing Educational Goals	12	7	7	384
In-service Education	12	7	18	384
Team Teaching	12	7	10	384
Work-Study Programs	12	7	9	384
New Social Sciences	17.5	6	7	329
Instructional Material Selection	17.5	6	9	329
School Board and Community Relations	17.5	6	9	329
Merit Systems	17.5	6	2	329
New Approaches in Vocational and Adult Education	21.5	5	7	275
Program Evaluation	21.5	5	14	275
Departmentalized Elementary Grades	21.5	5	16	275
Evaluation of Professional Personnel	21.5	5	18	275
Environmental Education	27.5	4	2	220
Basic Concepts of American Law	27.5	4	1	220
Participation of Non-Educators in School Affairs	27.5	4	5	220
Use of Community Resources	27.5	4	9	220
Language Laboratories	27.5	4	7	220
Behavior Modification	27.5	4	5	220
Teacher Training and Upgrading	27.5	4	15	220
Differentiated Staffing	27.5	4	4	220
New English Language Arts	37.5	3	11	165
Ethnic Studies	37.5	3	0	165
Staff Size	37.5	3	12	165
Program Budgeting	37.5	3	4	165
Guidance and Counseling	37.5	3	14	165
Employer/Staff Relations	37.5	3	14	165
Daily Demand Scheduling	37.5	3	1	165
Programmed Learning	37.5	3	4	165
Grouping	37.5	3	18	165

Table 10 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF DISTRICTS OF 300-599 STUDENTS CONSIDERING ADOPTION

N = 47	Rank	No. of Districts Considering Adopting	No. of Districts Adopting	No. of Districts Potentially Interested
Programs for the Gifted and Handicapped	37.5	3	10	165
Libraries	37.5	3	12	165
Staff Roles and Utilization	37.5	3	1	165
New Mathematics	51.5	2	33	110
Systems Analysis	51.5	2	1	110
Problem Diagnosis and Definition	51.5	2	2	110
Decision-Making	51.5	2	4	110
Dropouts	51.5	2	6	110
Shared Services	51.5	2	5	110
Student Rights	51.5	2	2	110
Group Dynamics	51.5	2	0	110
Instructional Technology	51.5	2	5	110
Discovery	51.5	2	7	110
Multiple Classes	51.5	2	3	110
Simulation and Gaming	51.5	2	2	110
Pre-Primary Programs	51.5	2	8	110
Teacher Attitudes Toward the Disadvantaged	51.5	2	4	110
Head Start, Follow Through Programs	51.5	2	10	110
Recruitment and Retention of Educational Personnel	51.5	2	6	110
Cultural Enrichment	64	1	5	55
Information Systems	64	1	1	55
Planning (Financial)	64	1	4	55
Finance	64	1	6	55
Integration	64	1	4	55
Values and Motivations of the Disadvantaged	64	1	2	55
Migrant Education	64	1	2	55
Programs for the Perceptually Handicapped	64	1	6	55
Management Training	64	1	2	55
Open Society Education	73	0	0	0
Assessment (Achievement)	73	0	13	0
Change Agents	73	0	0	0
Plant and Facilities Utilization	73	0	5	0
Delinquency Control Programs	73	0	1	0
Children's Centers	73	0	1	0
English for the Foreign Speaking Child	73	0	1	0
Learning Disability Clinic	73	0	3	0
Selection of Administration and Instructional Personnel	73	0	3	0
Total			533	

in that enrollment category in the United States that may be assumed to be considering adoption of that innovation. Multipliers for each enrollment category were computed by this process.

The estimates in column 4 of Table 3 contain sums across enrollment classifications. They indicate the total numbers of districts in the United States potentially concerned with each innovation area, and, therefore, are estimates of the total potential audience for targeted communications on each subject.

Among the 25 highest ranking innovations across all enrollment categories, 9 may be classified as curriculum changes, 7 as concerned with instruction, 6 as related to management and organization, and 3 as concerned with professional personnel.

There is a substantial amount of overlap in the top 25 among the various enrollment categories, indicating that many areas are of general concern, regardless of enrollment size. With respect to the number of innovations adopted, however, the larger the district is, the more innovations it is likely to have adopted. The largest districts (25,000 and above) have adopted 40.5 innovations per district and the smallest districts (300-599) only 11.3. Across all enrollment categories, the number of innovations adopted per district is directly proportional to size. It may be assumed that larger districts have staff and research capabilities necessary to study changes that might be needed and to plan and implement those chosen. The larger districts serve many more students, so it is fortunate that they do seem to have these capabilities. This finding reinforces the already existing trend toward consolidation of districts.

Higher Education

The survey questionnaires for higher education were processed in the same way as those for elementary and secondary education. Returns were separated into the three categories of institutions granting two-year associate degrees, those granting bachelor's degrees and those granting master's degrees or higher. Questionnaires were sent to almost all of the institutions of higher education, both public and private, in the United States. As Table 2 showed, return percentages ranged from 34 to 45 for the three groups, with an overall return of 39 percent.

Returns were summarized separately for each degree classification and then summed across classifications. Tabulations by innovation indicate the number of institutions in each classification having adopted

each innovation listed and the number considering adoption of each. Innovations were ranked on the basis of the tabulations for adoption consideration, with those having the higher totals being given the higher ranks. Those with higher ranks are the ones in which interest currently and in the future is greater, and therefore are those that might be considered for targeted communication treatment.

Tables 11 through 15 present listings of innovations in rank order by the number of institutions considering adoption for each degree category. The first column indicates the rank, the second the number of institutions considering adoption, the third the number that have adopted each innovation, and the fourth presents projections of the total number of institutions potentially interested in each innovation. The fourth column thus indicates the size of the possible audience for targeted communications on each innovation.

Using the assumption that the return questionnaires responses were representative of all responses, the projections are computed by dividing the return percentages into 100 for each category to obtain multipliers that were then applied to the totals for consideration of adoption for each innovation. The projections were computed separately for each degree classification and then summed across classifications to provide estimates of potential audiences for communications in each area.

Among the 25 highest ranking innovations across all degree classifications (Table 11), 10 were in the areas of management and organization, 5 each in instruction and professional personnel concerns, 3 related to students, and 2 to curriculum.

The areas of most interest and concern in higher education are, as indicated by these figures, somewhat different from those in elementary and secondary education. Curriculum changes appear most prominently among the higher ranking areas for elementary and secondary education, while they are of much less interest in higher education. Institutions of higher education may feel that their breadth of coverage is already so great as to make it unnecessary to offer additional subjects. Elementary and secondary districts, on the other hand, are under great pressure to develop more relevant curricula and greater subject matter coverage. Management and organization is of primary concern to higher education, possibly because of new and rapidly developing interest in these areas by students, political forces and the general public, and because of extreme financial pressures. Elementary and secondary districts share some of these concerns. Both types of educational organizations are interested in instructional change, with some indication of slightly greater interest on the part of elementary and secondary districts.

Table 11

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF
ALL HIGHER EDUCATION INSTITUTIONS CONSIDERING ADOPTION

N = 865	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Student Evaluation of Faculty	1	273	365	703
Calendar Changes	2	212	416	549
Grading and Other Evaluation Systems	3	210	131	539
Planning, Programming and Budgeting	4	195	299	498
Interdisciplinary Studies	5	187	277	471
Effectiveness-Productivity of Faculty	6	186	214	480
Solutions to Dropout Problem	7	178	108	472
Environmental and Ecological Studies	8	177	179	450
Management Information Systems	9	166	88	413
Effectiveness of Instruction	10	165	238	426
Efficient Use of Time and Facilities	11.5	161	416	410
Effects of Shifts in Power	11.5	161	125	402
Preparatory Summer Sessions for Educationally Disadvantaged	13	159	302	421
Relationship to Community	14	158	277	409
Programmed Instruction	15.5	156	212	410
Revisions to Tenure Policies	15.5	156	236	403
Efficient Utilization of Teacher Resources	17	150	172	382
Off Campus Activities for Academic Credit	18	148	326	379
ETV	19.5	141	204	367
Predicting Academic Success	19.5	141	255	372
Interacting Computer Instruction	21	137	125	353
Decentralization of Student Counseling	22	131	150	338
More Emphasis on Teaching in Faculty Reward System	23	125	203	318
Governing Board Composition, Functioning, Characteristics	24	120	235	295
Selection of Disadvantaged Students	25	119	317	309
Remedial Programs	26	116	423	303
Professional Development	27	113	354	291
Design of Physical Facilities	28	112	296	290
Ethnic Studies	29	109	314	280
Library as Central to Education Process	30	105	218	277
Institutional and Personal Codes of Conduct and Freedoms	32.5	104	326	266
Use of Student Evaluations of Courses	32.5	104	301	263
Student Participation in Admissions Decisions	32.5	104	182	263
Criteria for Degrees	32.5	104	249	260
Finance-Alternative Funding Patterns	35.5	100	105	254
The Disadvantaged-Below Median in Tests, Classrank, Family Income	35.5	100	273	268
Articulation Between Secondary, Junior, Senior College and Graduate Programs	37.5	99	200	258

Table 11 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF
ALL HIGHER EDUCATION INSTITUTIONS CONSIDERING ADOPTION

N = 865	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Admissions' Policy and Student Selection	37.5	99	355	255
Student Concerns, Motivations, Aspirations, Affairs and Characteristics	39	97	233	253
Tutoring Minority Students	40	89	306	229
Role of Teaching Assistants	41	86	123	224
Individual Study	42.5	82	361	216
University Policies on Student Living	42.5	82	212	205
Work-Study Programs	44	80	425	214
Off Campus Instruction Community Centers	45	74	151	199
Life-Long Education	46	72	121	179
Organization, Personnel and Utilization of Research	47.5	68	81	174
Experimental Colleges	47.5	68	78	168
Technological Aids	49	65	203	168
Impact of Scholarships	50.5	60	61	155
Values and Interests, Aspirations, Motivations of Faculty	50.5	60	77	153
Overseas Campuses	52.5	59	98	150
Student Aid Formulas	52.5	59	323	151
Accreditation	54.5	58	347	155
Population Studies	54.5	58	64	151
Problem and Policy Oriented Research	56	53	79	132
Occupational Orientation	57	52	112	144
Test Bias in Student Selection	58	51	40	132
Student Participation in Planning His Own Program	59	48	158	120
Vocational Orientation	60	45	168	123
Specialization in Research or Instruction	61	44	119	113
Student Destinations	62	43	80	114
Comparative Data from Other Schools	63	40	199	106
Health Education	64	37	206	95
Technical Institutes	65	33	75	84
Unions	66	28	36	71
Economic Returns to Society	67	27	34	67
Home Study	68	22	41	56
No Lower Division	69	12	19	28
Planning Higher Education in Underdeveloped Countries	70	11	21	28
All Graduate	71	6	9	14
Total			13,945	

Table 12

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF INSTITUTIONS GRANTING MASTER'S AND HIGHER DEGREES CONSIDERING ADOPTION

N = 318	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Student Evaluation of Faculty	1	107	134	235
Planning, Programming and Budgeting	2	90	118	198
Management Information Systems	3	85	45	187
Calendar Changes	4	82	147	180
Effects of Shifts in Power	5	75	53	165
Interdisciplinary Studies	6	74	138	163
Environmental and Ecological Studies	7	73	93	161
Grading and Other Evaluation Systems	8	71	63	156
Effectiveness-Productivity of Faculty	9	70	81	154
Efficient Use of Time and Facilities	10	67	89	147
Efficient Utilization of Teacher Resources	11	65	71	143
Effectiveness of Instruction	12	60	80	132
Governing Board Composition, Functioning, Characteristics	13	57	83	125
Off Campus Activities for Credit	14	56	137	123
Relationship to Community	15.5	55	110	121
Solutions to Dropout Problem	15.5	55	32	121
Decentralization of Student Counseling	18	53	51	117
Interacting Computer Instruction	18	53	61	117
Revisions to Tenure Policies	18	53	103	117
Programmed Instruction	20.5	52	70	114
More Emphasis on Teaching in Faculty Reward System	20.5	52	85	114
ETV	22	51	101	112
Use of Student Evaluation of Courses	23	44	111	97
Criteria for Degrees	24	43	93	95
Ethnic Studies	25.5	41	141	90
Preparatory Summer Sessions for Educationally Disadvantaged	25.5	41	122	90
Predicting Academic Success	27.5	40	90	88
Professional Development	27.5	40	110	88
Student Participation in Admissions Decisions	29	39	72	86
Finance-Alternative Funding Patterns	31	38	44	84
Institutional and Personal Codes of Conduct and Freedoms	31	38	132	84
Selection of Disadvantaged Students	31	38	147	84
Design of Physical Facilities	33	37	119	81
Articulation Between Secondary, Junior, Senior College and Graduate Programs	34.5	35	63	77
Remedial Programs	34.5	35	129	77
Role of Teaching Assistants	36	34	66	75
Life-Long Education	37	33	49	73
Experimental Colleges	38	32	48	70
University Policies on Student Living	39.5	31	115	68
Tutoring Minority Students	39.5	31	138	68

Table 12 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF INSTITUTIONS GRANTING MASTER'S AND HIGHER DEGREES CONSIDERING ADOPTION

N = 318	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Library as Central to Education Process	42	30	84	66
Admissions' Policy and Student Selection	42	30	136	66
Student Concerns, Motivations, Aspirations, Affairs and Characteristics	42	30	91	66
Organization, Personnel and Utilization of Research	44	29	41	64
Problem and Policy Oriented Research	46	27	42	59
Individual Study	46	27	132	59
The Disadvantaged-Below Median in Tests, Classrank, Family Income	46	27	119	59
Test Bias in Student Selection	48.5	24	15	53
Values and Interests, Aspirations, Motivations of Faculty	48.5	24	21	53
Impact of Scholarships	50	22	19	48
Overseas Campuses	52.5	21	44	46
Population Studies	52.5	21	33	46
Student Participation in Planning His Own Program	52.5	21	63	46
Student Aid Formulas	52.5	21	122	46
Specialization in Research or Instruction	56	20	62	44
Work-Study Program	56	20	152	44
Technological Aids	56	20	81	44
Health Education	58.5	17	84	37
Off-Campus Instruction Community Centers	58.5	17	66	37
Accreditation	61	16	116	35
Economic Returns to Society	61	16	20	35
Unions	61	16	11	35
Technical Institutes	63	15	35	33
Occupational Orientation	64	12	31	26
Home Study	65.5	11	20	24
Comparative Data from Other Schools	65.5	11	74	24
Student Destinations	67	10	21	22
No Lower Division	68.5	9	13	20
Vocational Orientation	68.5	9	44	20
All Graduate	70.5	5	8	11
Planning Higher Education in Underdeveloped Countries	70.5	5	17	11
Total			5,551	

Table 13

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF INSTITUTIONS GRANTING BACHELOR'S DEGREES CONSIDERING ADOPTION

N = 319	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Grading and Other Evaluation Systems	1	95	51	247
Student Evaluation of Faculty	2	92	152	239
Interdisciplinary Studies	3	84	105	218
Preparatory Summer Sessions for Educationally Disadvantaged	4	71	105	185
Calendar Changes	6	68	182	177
Environmental and Ecological Studies	6	68	55	177
Effectiveness-Productivity of Faculty	6	68	75	177
Revisions to Tenure Policies	8	67	90	174
Relationship to Community	9.5	62	88	161
Effectiveness of Instruction	9.5	62	86	161
Solutions to Dropout Problem	11	61	30	159
Effects of Shifts in Power	12	59	51	153
Off-Campus Activities for Academic Credit	13	58	132	151
Efficient Use of Time and Facilities	14.5	57	86	148
Predicting Academic Success	14.5	57	96	148
Programmed Instruction	16.5	52	57	135
Selection of Disadvantaged Students	16.5	52	102	135
Planning, Programming and Budgeting	18.5	51	119	133
Remedial Programs	18.5	51	130	133
Admissions' Policy and Student Selection	20	50	133	130
Governing Board Composition, Functioning, Characteristics	23	49	113	127
Management Information Systems	23	49	24	127
Student Participation in Admission Decisions	23	49	79	127
Interacting Computer Instruction	23	49	44	127
Efficient Utilization of Teacher Resources	23	49	62	127
Criteria for Degrees	26	48	91	125
Design of Physical Facilities	28	47	93	122
ETV	28	47	42	122
Professional Development	28	47	134	122
More Emphasis on Teaching in Faculty Reward System	30	46	75	120
Institutional and Personal Codes of Conduct and Freedom	31	45	117	117
Finance-Alternative Funding Patterns	32	44	34	114
Ethnic Studies	33	43	100	112
Library as Central to Education Process	35.5	42	77	109
Decentralization of Student Counseling	35.5	42	58	109
Student Concerns, Motivations, Aspirations, Affairs, and Characteristics	35.5	42	81	109

Table 13 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF INSTITUTIONS GRANTING BACHELOR'S DEGREES CONSIDERING ADOPTION

N = 319	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
University Policies on Student Living	35.5	42	80	109
Use of Student Evaluation of Courses	38	39	124	101
Tutoring Minority Students	39	37	95	96
The Disadvantaged-Below Median in Tests, Classrank, Family Income	40	36	82	94
Articulation Between Secondary, Junior, Senior College and Graduate Programs	41	35	48	91
Work-Study Programs	42	32	134	83
Technological Aids	43	31	46	81
Life-Long Education	44	30	20	78
Off-Campus Instruction Community Centers	45	29	23	75
Overseas Campuses	46.5	28	51	73
Individual Study	46.5	28	156	73
Experimental Colleges	48	27	17	70
Role of Teaching Assistants	49.5	24	33	62
Student Aid Formulas	49.5	24	121	62
Organization, Personnel and Utilization of Research	52	23	22	60
Impact of Scholarships	52	23	26	60
Values and Interests, Aspirations, Motivations of Faculty	52	23	38	60
Accreditation	55	21	120	55
Student Participation in Planning His Own Program	55	21	66	55
Population Studies	55	21	17	55
Student Destinations	57	19	23	49
Vocational Orientation	58	18	31	47
Comparative Data from Other Schools	59	16	65	42
Problem and Policy Oriented Research	60	15	19	39
Occupational Orientation	61	13	18	34
Specialization in Research or Instruction	62.5	11	32	29
Test Bias in Student Selection	62.5	11	20	29
Technical Institutes	64	10	14	26
Health Education	65	8	44	21
Economic Returns to Society	66.5	6	9	16
Home Study	66.5	6	9	16
No Lower Division	69	3	5	8
Planning Higher Education in Underdeveloped Countries	69	3	2	8
Unions	69	3	7	8
All Graduate	71	1	0	3
Total			4,766	

Table 14

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF INSTITUTIONS GRANTING ASSOCIATE OF ARTS DEGREES CONSIDERING ADOPTION

N = 228	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Student Evaluation of Faculty	1	74	79	229
Calendar Changes	2.5	62	87	192
Solutions to Dropout Problem	2.5	62	46	192
Planning, Programming and Budgeting	4	54	62	167
Programmed Instruction	5	52	85	161
Effectiveness-Productivity of Faculty	6	48	58	149
Preparatory Summer Sessions for Educationally Disadvantaged	7	47	75	146
Grading and Other Evaluation Systems	8.5	44	17	136
Predicting Academic Success	8.5	44	69	136
Effectiveness of Instruction	10.5	43	72	133
ETV	10.5	43	61	133
Relationship to Community	12	41	79	127
Efficient Use of Time and Facilities	13.5	37	59	115
The Disadvantaged-Below Median in Tests, Classrank, Family Income	13.5	37	72	115
Decentralization of Student Counseling	16.5	36	41	112
Environmental and Ecological Studies	16.5	36	31	112
Efficient Utilization of Teacher Resources	16.5	36	39	112
Revisions to Tenure Policy	16.5	36	43	112
Interacting Computer Instruction	19	35	20	109
Off Campus Activities for Academic Credit	20	34	57	105
Library as Central to Education Process	21	33	57	102
Management Information Systems	22	32	19	99
Remedial Programs	23	30	164	93
Articulation Between Secondary, Junior, Senior College and Graduate Programs	25	29	89	90
Interdisciplinary Studies	25	29	34	90
Selection of Disadvantaged Students	25	29	68	90
Design of Physical Facilities	28.5	28	84	87
Off-Campus Instruction Community Centers	28.5	28	62	87
Role of Teaching Assistants	28.5	28	24	87
Work-Study Programs	28.5	28	139	87
Occupational Orientation	32.5	27	63	84
Effects of Shifts in Power	32.5	27	21	84

Table 14 (Concluded)

RANKING OF INNOVATIVE PROGRAMS--BY NUMBER OF INSTITUTIONS GRANTING ASSOCIATE OF ARTS DEGREES CONSIDERING ADOPTION

N = 228	Rank	No. of Institutions Considering Adopting	No. of Institutions Adopting	No. of Institutions Potentially Interested
Individual Study	32.5	27	73	84
More Emphasis on Teaching in Faculty Reward System	32.5	27	43	84
Professional Development	35	26	110	81
Ethnic Studies	36.5	25	73	78
Student Concerns, Motivations, Aspirations, Affairs and Characteristics	36.5	25	61	78
Accreditation	39.5	21	111	65
Institutional and Personal Codes of Conduct and Freedom	39.5	21	77	65
Use of Student Evaluation of Courses	39.5	21	66	65
Tutoring Minority Students	39.5	21	73	65
Admissions' Policy and Student Selection	42	19	86	59
Finance-Alternative Funding Patterns	43.5	18	27	56
Vocational Orientation	43.5	18	94	56
Organization, Personnel and Utilization of Research	46.5	16	18	50
Student Participation in Admissions Decisions	46.5	16	31	50
Population Studies	46.5	16	14	50
Test Bias in Student Selection	46.5	16	5	50
Impact of Scholarships	49	15	16	47
Governing Board Composition, Functioning, Characteristics	51.5	14	39	43
Technological Aids	51.5	14	76	43
Student Aid Formulas	51.5	14	80	43
Student Destinations	51.5	14	36	43
Specialization in Research or Instruction	55.5	13	25	40
Criteria for Degrees	55.5	13	65	40
Comparative Data From Other Schools	55.5	13	60	40
Values and Interests, Aspirations, Motivations of Faculty	55.5	13	18	40
Health Education	58	12	78	37
Problem and Policy Oriented Research	59	11	18	34
Overseas Campuses	60	10	3	31
Experimental Colleges	62.5	9	13	28
Life-Long Education	62.5	9	52	28
University Policies on Student Living	62.5	9	17	28
Unions	62.5	9	18	28
Technical Institutes	65	8	26	25
Student Participation in Planning His Own Program	66	6	29	19
Economic Returns to Society	67.5	5	5	16
Home Study	67.5	5	12	16
Total				

Table 15

COMPARISON OF RANKINGS BY DEGREE LEVEL FOR
NUMBER OF INSTITUTIONS CONSIDERING ADOPTION

N = 865	Overall Rank	Master's Degree or Above	Bachelor's Degree	Associate of Arts Degree
Student Evaluation of Faculty	1	1	2	1
Calendar Changes	2	4	6	2.5
Grading and Other Evaluation Systems	3	8	1	8.5
Planning, Programming and Budgeting	4	2	18.5	4
Interdisciplinary Studies	5	6	3	25
Effectiveness-Productivity of Faculty	6	9	6	6
Solutions to Dropout Problem	7	15.5	11	2.5
Environmental and Ecological Studies	8	7	6	16.5
Management Information Systems	9	3	23	22
Effectiveness of Instruction	10	12	9.5	10.5
Efficient Use of Time and Facilities	11.5	10	14.5	13.5
Effects of Shifts in Power	11.5	5	12	32.5
Preparatory Summer Sessions	13	25.5	4	7
Relationship to Community	14	15.5	9.5	12
Programmed Instruction	15.5	20.5	16.5	5
Revisions to Tenure Policies	15.5	18	8	16.5
Efficient Utilization of Teacher Resources	17	11	23	16.5
Off Campus Activities for Academic Credit	18	14	13	20
ETV	19.5	22	28	10.5
Predicting Academic Success	19.5	27.5	14.5	8.5
Interacting Computer Instruction	21	18	23	19
Decentralization of Student Counseling and Other Student Personnel Activities	22	18	35.5	16.5
More Emphasis on Teaching in Faculty Reward Systems	23	20.5	30	32.5
Governing Board Composition, Functioning, Characteristics	24	13	23	51.5
Selection of Disadvantaged Students	25	31	16.5	25
Remedial Programs	26	34.5	18.5	23
Professional Development	27	27.5	28	35
Design of Physical Facilities	28	33	28	28.5
Ethnic Studies	29	25.5	33	36.5
Library as Central to Education Process	30	42	35.5	21
Institutional and Personal Codes of Conduct and Freedoms	32.5	31	31	39.5
Use of Student Evaluations of Courses	32.5	23	38	39.5
Student Participation in Admissions Decisions	32.5	29	23	46.5
Criteria for Degrees	32.5	24	26	55.5
Finance-Alternative Funding Patterns	35.5	31	32	43.5
The Disadvantaged-Below Median in Tests, Classrank, Family Income	35.5	46	40	13.5
Articulation Between Secondary, Junior, Senior College and Graduate Programs	37.5	34.5	41	25

Table 15 (Concluded)

COMPARISON OF RANKINGS BY DEGREE LEVEL FOR
NUMBER OF INSTITUTIONS CONSIDERING ADOPTION

N = 865	Overall Rank	Master's Degree or Above	Bachelor's Degree	Associate of Arts Degree
Admissions Policy and Student Selection	37.5	42	20	42
Student Concerns, Motivations, Aspirations, Affairs and Characteristics	39	42	35.5	36.5
Tutoring Minority Students	40	39.5	39	39.5
Role of Teaching Assistants	41	36	49.5	28.5
Individual Study	42.5	46	46.5	32.5
University Policies on Student Living	42.5	39.5	35.5	62.5
Work-Study Programs	44	56	42	28.5
Off-Campus Instruction Community Centers	45	58.5	45	28.5
Life-Long Education	46	37	44	62.5
Organization, Personnel and Utilization of Research	47.5	44	52	46.5
Experimental Colleges	47.5	38	48	62.5
Technological Aids	49	56	43	51.5
Impact of Scholarships	50.5	50	52	49
Values and Interests, Aspirations, Motivations of Faculty	50.5	48.5	52	55.5
Overseas Campuses	52.5	52.5	46.5	60
Student Aid Formulas	52.5	52.5	49.5	51.5
Accreditation	54.5	61	55	39.5
Population Studies	54.5	52.5	55	46.5
Problem and Policy Oriented Research	56	46	60	59
Occupational Orientation	57	64	61	32.5
Test Bias in Student Selection	58	48.5	62.5	46.5
Student Participation in Planning His Own Program	59	52.5	55	66
Vocational Orientation	60	68.5	58	43.5
Specialization in Reserach or Instruction	61	56	62.5	55.5
Student Destinations	62	67	57	51.5
Comparative Data from Other Schools	63	65.5	59	55.5
Health Education	64	58.5	65	58
Technical Institutes	65	63	64	65
Unions	66	61	69	62.5
Economic Returns to Society	67	61	66.5	67.5
Home Study	68	65.5	66.5	67.5
No Lower Division	69	68.5	69	70.5
Planning Higher Education in Under-developed Countries	70	70.5	69	69
All Graduate	71	70.5	71	70.5

A number of innovations appear in the top 25 in two or more degree classification lists, indicating broad higher education interest. The number of innovations adopted per institution does not, however, differ greatly among the three degree classifications. Institutions granting two year associate degrees show an average adoption rate of 17.4, those granting bachelor's degrees a rate of 14.9, and those granting master's or higher degrees a rate of 15.9.

V RESULTS OF INFORMATION NEEDS SURVEY

The procedure for distributing the forms concerning information needs and use was described in the previous section. The Phase I survey, concerned with innovative programs, identified those districts and institutions that had adopted the various innovations on the list and were thus likely to be in the best position to know the information requirements for each. For the purpose of preparing targeted communications, the primary interest, of course, is in those areas of innovation ranking highest in the Phase I survey. No attempt was made to obtain probability samples of districts or institutions for mailing the information needs forms since their purpose was to provide general guidance to preparers of targeted communications rather than to make a statistical survey. There seemed no reason to expect, further, that information requirements would differ markedly among districts of differing enrollment size or institutions at different degree levels.

Taking into account the need for enough responses on each high-ranking innovation to permit useful summaries of information requirements, approximately 30 questionnaires were distributed for each innovation. Returns averaged about 10 per innovation. They were supplemented by interviews in colleges, universities, and school districts to explore information requirements in greater depth. In all, some 750 forms on information needs were mailed to 150 school districts and a like number to about 150 institutions of higher education.

The form used (Appendix C) was comprised of a cover page of instructions and a page for writing in the types of information required, with indications of sources and criticality for each item of information. The cover page included the following list of general information categories to guide respondents in formulating their responses:

- Program Description Information
- Planning and Implementation Information
- Personnel Requirements, including Training Information
- Facilities and Equipment Requirements Information

- Financial and Cost Information
- Evaluation Information, including Effects on Students and Staff
- Student Information.

These are general categories, and respondents were asked to try to formulate their information needs with greater specificity. Many organizations did provide specific items; others simply used the general categories. In all cases, however, the respondents specified whether their information sources were local or outside, and estimated the criticality of information in accordance with the instructions.

The returns were grouped, first by innovation The next step was to summarize responses for each innovation on blank copies of the questionnaire. The information items were grouped in appropriate categories (usually the general ones listed above, with necessary subheadings) and the categories were listed in the left-hand column. Check marks for source and criticality for each category were then tabulated in the appropriate spaces. The result was a summary sheet for each innovation, listing the types of information needed, and the number of organizations checking each of the three sources and each of the three estimates of criticality for every type of information.

Those items for which the predominant feeling is that only local data are needed require only limited attention from the preparer of a targeted communication. If, however, most organizations obtained any item of information locally because it was not available elsewhere, that item should be given primary focus by the preparer. If outside sources were used, it cannot be assumed that they were entirely adequate either in content, format or convenience of access, and some coverage in a targeted communication might, therefore, be appropriate. The primary focus should remain, however, on those items obtained locally because they were not available elsewhere. Respondents who checked this category obviously found that neither local nor outside sources offered adequate information. If items in this category are also seen as necessary to decision-making, they should have particular attention in a targeted communication. Similarly, those information items rated as desirable for the best decision should be covered, with less emphasis on those not seen as vital.

Elementary and Secondary Education

Each of a number of the more highly rated innovations is discussed in turn below, with a brief summary of the important information requirements.

- Drugs and Health. This is the curriculum item in which the greatest interest was expressed. Information deemed essential to make decisions included program descriptions, planning and implementation information, and cost and evaluation data. Program descriptions and evaluation information were obtained from outside sources. Materials for planning and implementation were not readily available elsewhere and had to be obtained locally in some cases. Cost data were obtained locally, with the feeling that only local data were needed. For all of these types of information, there were checkmarks in all source columns, indicating the use of multiple sources. Information on community interest and support was felt essential by some districts, and was obtained locally in all cases because other data were either not sought or not available.

- Flexible Scheduling. For this aspect of instruction, computer and other costs and personnel requirements were the categories on which information was felt to be most essential. All three of the listed sources had been used by one or more districts, but a number had used local sources because there were no others available. Program descriptions, and facilities and equipment information were also thought to be necessary in decision making by some districts, but local and outside sources had been used with apparent satisfaction in most instances. Other scheduling items of interest to some districts were master schedules and individual pupil schedules, evaluation information, and in-service teacher training plans.

- Family Life and Sex Education. In this subject, program descriptions, evaluation information, and implementation and planning information were regarded as essential by most of the districts responding. For these items, however, local and outside sources had been used, and there were no indications that local data had been used because no other material was available. Information on community acceptance was also regarded as important by some districts but they had obtained it locally, presumably because community differences are so great on this subject that only local data were felt to be useful. Information on costs and personnel requirements were also obtained locally, without a felt need for outside sources.

- Individualized Instruction. Important items here included information on ongoing programs, equipment, materials and facilities availability, and personnel requirements, with emphasis on means of assessing teacher skills in individualized instruction. In no case was information in these areas obtained locally because it was not available elsewhere; rather, both local and outside sources were used. There was some difficulty in obtaining information on sources of programmed material in some cases.

- New Social Sciences. Program information was seen as of primary importance here by a majority of the districts responding. It was obtained almost exclusively from outside sources. Information on the availability of instructional materials and assessments of those materials were felt to be necessary or highly desirable by a number of districts, and had been obtained from outside sources in most cases. Program evaluation information was regarded as necessary or very valuable and, in some cases, had to be obtained locally because it was not otherwise available. Cost information was necessary and usually obtained from outside sources.

- Nongraded Procedures. In this aspect of instruction, personnel and other cost information was seen as essential by the largest number of respondents, and they used local sources because they felt no others were necessary in most instances. Nearly as many districts found program descriptions to be essential, but obtained it largely from outside sources. Information on teacher acceptance was seen as essential by a number of districts, and all had obtained it locally with no feeling of need for outside sources. Teacher acceptance in other communities may have been felt to have little relevance to a particular local situation. Community orientation and acceptance information were desired by some districts and, in some cases, local sources were used because no others were available. In-service training information was similarly obtained. Other aspects on which information was essential or desirable included evaluation procedures, student achievement under non-graded procedures, effects on building designs, articulation of elementary and secondary school programs, and implementation problems and procedures.

- Increasing Vocational Awareness. This is a rather general item and the information needs expressed were correspondingly general and somewhat vague. Cost; facilities, equipment and materials; and program information were prominently listed as necessary or desirable, as were personnel requirements and student information.

In almost all cases, however, information was obtained locally with no felt need to look elsewhere, or it was obtained from available outside sources. Vocational choice data and vocational needs projections were also mentioned and such information was obtained from outside sources.

- Program Budgeting. Descriptions of program budgeting systems were most prominently mentioned as necessary for decision-making. Outside sources were used. Other items included materials and equipment requirements, financial resource availability, personnel requirements, and cost information. Most were obtained from outside sources with some locally derived either because only local data were required or data were not available elsewhere.

- Differentiated Staffing. Cost information, program description information, and personnel requirements were most often mentioned as essential in this matter affecting professional personnel. In no case was the information obtained locally because it was not available elsewhere, but sources were both local and outside. Information on effects on students, staff reactions and benefits, planning and implementation with related recruitment and selection information, and evaluation was also sought. In some cases it was necessary to obtain it locally because no other sources were available.

- New Approaches in Adult and Vocational Education. Cost information, facilities, equipment and materials needs and availabilities, program descriptions, and personnel requirements including vocational counseling were given high priorities by most respondents. In almost all cases the information was obtained locally because only local data were required, or from outside sources. Also mentioned were needs for information on student interest, placement and apprentice programs, cooperative programs, and means of involving the community.

- Information Systems. For this management item, personnel and training requirements were most often mentioned as necessary, and in some cases were obtained locally because no other sources were available. Information on financial and cost aspects, facilities and equipment requirements, and planning and implementation was also prominently mentioned as necessary, but almost always obtained from outside, or locally with no felt need for any outside sources.

The summaries given above indicate the kinds of information needs that are most prominent for the various highly ranked innovations. Program descriptions from other districts are almost always felt to be essential or highly desirable, and they are not always readily available. Evaluations of specific programs, and techniques for program evaluation are also highly regarded and difficult to obtain. Information on personnel, facilities, and equipment requirements is frequently needed, and must usually be obtained from outside sources. Financial and cost data are almost always needed for effective decision-making and planning, but they appear to be generated locally in most cases, probably because cost variations from community to community are large enough as to make generalized cost information minimally useful. It should be noted, however, that complete local estimates cannot be made without outside information on computer or other equipment costs, materials costs and the like in the case of many kinds of innovations. Such costs may be relatively minor compared with locally determined personnel costs, but they cannot be ignored and most decision-makers feel a need to have cost information of this kind.

The interviews that were conducted provided some additional information in greater depth than was obtained from the mailed forms, but not enough to justify their extensive use in view of the substantial costs of interviewing. Interviewing may be a useful supplement if mail responses are inadequate for whatever reasons. If interviewing is to be done, the topics to be covered and the number and schedule of interviews should be chosen after the mailed responses have been analyzed, so that the interviews can be used efficiently to fill gaps in the mailed responses.

Preparers of targeted communications should probably be provided with the appropriate innovation summary sheets as well as with summaries of any additional material obtained through interviews. They will thus obtain guidance on the general areas to be covered and also on any more specific information needs stated by respondents.

The summaries were not difficult to prepare. Respondents appeared to take their task seriously. Many of them provided large numbers of information items. The checkmarks for source and criticality were distributed among all columns and, on most respondent sheets, varied considerably, depending on which item of information was being judged. This variation indicates that respondents considered each item separately, and did not simply check the same columns for each in a routine fashion.

Higher Education

The information needs for some of the high ranking innovations in higher education are described below.

- Student Evaluation of Faculty. Student information was regarded by most respondents as being essential to decision-making in this area. In all cases, it was obtained locally, because only local data were felt to be required--an indication that the kind of student information needed to be used in designing and implementing a faculty evaluation program is that concerned with the characteristics and composition of the institution's own student body. Program evaluation information was next in importance. Such information was obtained locally, however, with apparent satisfaction, since there was no expressed need to look elsewhere. Program descriptions were seen as essential or highly desirable by most institutions, and they were obtained primarily from outside sources.

- Calendar Changes. Information as to effects on students was given a high criticality rating by the majority of institutions for this administrative matter. That the focus was on the institutions' own student bodies is suggested by a predominant tendency to obtain the information locally, with no feeling that other data were required. Some institutions used outside sources, however. Personnel requirements and information regarding personnel attitudes were mentioned by a prominent number of institutions and, in all cases, such information was obtained locally, because only local data were seen to be required. Program evaluation information was seen as essential or desirable in some cases, and was obtained locally or from outside satisfactorily. Information on accreditation requirements, specific calendar alterations plans, and lists of colleges with new calendars was also needed in some cases. In no instance was any kind of information on calendar changes obtained locally because it was not available elsewhere.

- Grading and Other Evaluation Systems. Program descriptions, evaluation information, and information on student characteristics were regarded as essential or highly desirable by most respondents for this innovation. In almost every case, the information was obtained from outside sources, or locally because only local data were felt to be required. Assessments of faculty viewpoints were seen as essential to a number of institutions, but all used local sources, since presumably it was their own

faculties about which they were concerned. Information on retention rates, effects on transfers and on graduate school applications, and data banks was also mentioned as specifically needed.

- Planning, Programming, and Budgeting. For this management area, no single item was given frequent mention by any substantial number of institutions, but there were many items in which interest was expressed. With the exception of program descriptions, which were obtained from outside sources, local information sources were adequate. Planning, programming, and budgeting systems must be tailored to individual needs which probably accounts for institutional willingness to rely on local sources. Specific information needs included enrollments by curriculum, projected enrollments, inputs on priorities from faculty and students, income projections, personnel requirements, facilities and equipment requirements, financial and cost aspects, and program evaluation. It may be noted that many of these items represent inputs to each institution's planning and programming system that can only be obtained locally rather than information about planning, programming, and budgeting systems operations in general.

- Interdisciplinary Studies. This is a rather general, loosely defined innovation and one in which programs are usually developed to fit local institutional needs. For those reasons, information from other programs might be expected to have limited value. The findings indicated only a very few, rather generalized information needs, and there was no indication of difficulty in acquiring such information as is felt to be necessary. Items included program and organizational information for institutes and centers, all of which was obtained from outside sources, and evaluation for educational value, which was carried out locally.

- Solutions to the Dropout Problem. A great many information items were listed by the respondents for this type of innovation. The effect of solutions on students was given a number of mentions and, in all cases, information was obtained locally, because only local information was required, or from outside sources. Information on admission and readmission standards was also often mentioned, and in some cases was obtained locally because it was not elsewhere available. Other information needs included cost and availability of outside financing, effects of programs on faculty, guidance and testing programs, reasons for attrition, race and urban and rural data, dropout rates, and dropout curricula.

- Environmental and Ecological Studies. This is another area in which many individual information items were listed by respondent institutions. Program descriptions and model courses got the most attention as critical needs, with outside sources used in most cases and a local source because no others were known in only one instance. Equipment and materials requirements and availability, and cost information were felt to be essential or highly desirable by a number of institutions and some used local sources because no others were available. Other information needs included federal grants, assessments of faculty research interests, evidence of need for such studies as indicated by projected student interest and enrollment, credit transfer acceptance, and personnel requirements.

- Management Information Systems. The most commonly mentioned item felt to be critical to making decisions on management information systems was cost analysis and savings information. Such information had been obtained locally by some institutions that felt only local data were required, by others because they were unable to find it elsewhere, and by some from outside sources. Program descriptions were needed by a number of institutions and were obtained from outside sources. Other information needs included computer requirements, personnel requirements and job descriptions, management efficiency analyses, system flexibility, and storage requirements. Most of these were obtained from outside sources. A computer or management consulting firm may provide a substantial part of the needed information to institutions as a part of their services. Since management information systems must be tailored to the institution, such individualized services may be very useful, and other information sources may not be required. However, there may be problems in choosing among systems that are available or offered that should not be solved so readily with information from companies having a financial interest in the outcome. For these decisions, unbiased, independent information is required.

- Effectiveness of Instruction. Student information and evaluation information was most often mentioned as critical in judging the effectiveness of instruction. Only local data are seen as necessary in most cases. Program descriptions and information on planning and implementation and on personnel, facilities, and equipment was also felt to be necessary by a number of institutions, but all had obtained it locally, with no felt need for outside data. This type of innovation may be one that is reasonably well served at present, since most of the information needs can be satisfied locally.

- Effects of Shifts in Power Among Board, Administration, Faculty, Unions, Students, Extra-Institutional Groups. This is a rather general innovative area and the information requirements appear to be correspondingly vague and diffuse. No item was deemed as essential to decision-making by more than one institution, and available local information was thought to be adequate. Interest in the area is high as indicated by its high ranking, but it is not sufficiently well-defined to permit delineation of precise information requirements or the development of specific programs relating to power shifts.

- Preparatory Summer Sessions for the Educationally Disadvantaged. Evaluations of students who have participated in such programs in terms of their later success in college were regarded as essential or highly desirable by most institutions. Both outside and local sources were used. Program descriptions, planning and implementation, requirements for personnel, facilities, and equipment, costs, and student needs were information needs also listed as essential or desirable by many institutions. In most cases, only local sources were used, because no other data were felt to be required, but some institutions used outside sources as well. Other items mentioned included descriptions of guidance and testing programs, admission standards and criteria, faculty acceptance, and requirements for admission to the summer program.

- Institutional Relationship to the Community. This is a general area to which a wide variety of programs might be applied. Very few items of information were felt to be highly critical, and local sources were commonly used, because there was no need to go outside. Information on community attitudes and staff and faculty attitudes, necessarily locally derived, was mentioned by a number of institutions.

- Programmed Instruction. Program descriptions and evaluation information were listed as essential to decision-making by most institutions. Outside sources were used. Information on program sources was also needed and it was obtained outside the institutions. Facilities and equipment requirements and cost information were seen as essential by some institutions, and outside sources were used.

The summaries above indicate that problems of information acquisition and use may differ substantially in higher education from those in elementary and secondary education. Institutions of higher education do not express as many needs for so many kinds of information as do

elementary and secondary school districts, and they rarely are forced to use local data (in spite of its possible inadequacy) because no other sources are known or available to them. The explanation may be that almost every institution of higher education has a built-in research capability and faculty members are usually aware of recent and current research and are often acquainted with individuals in other institutions who are doing work relevant to their concerns. Further, there are local and national organizations of institutional research personnel through which colleges and universities keep one another informed about current developments in higher education.

Interviews with individuals involved in decision and planning processes in higher education tend to confirm the responses to the information needs mailing. Decision-making structures and the roles of many individuals in them appear to vary enormously from institution to institution. Changes are often made in response to pressures from many different directions and they may be made hurriedly, or, conversely, studied so long that no decision is forthcoming at all. For some areas of innovation, little information is available at any location, so administrators and faculty must proceed without that kind of guidance. If information exists it is often on the campus in printed form or can be obtained by phone calls or visits to individuals on other campuses. Finally, there are formal and informal networks and organizations of staff and faculty members, with frequent regular or ad hoc meetings to discuss educational developments.

As in the case of elementary and secondary education, the interviews that were held were interesting but added very little to the determination of specific information needs. In general, decision-makers and planners in higher education do not appear to formulate information requirements in advance and search for needed items sytematically, but rely heavily on personal contacts and the general research information available on their own campuses.

For higher education, and elementary and secondary education too, one of the most useful outputs of the survey is the identification of districts and institutions in which particular innovations have been tried. The names of individuals in those organizations who are familiar with the decision-making and planning processes are also provided, so that writers of targeted communications can have direct sources of information as they prepare their reports.

VI SUMMARY AND RECOMMENDATIONS

The methods described in the previous sections of this report have resulted in specification of areas of innovation for which school districts and institutions of higher education have the greatest needs for information and in delineation of the kinds of information needed for each of those areas.

The primary method used was the mailed survey, with some supplementation by in-person interviews. The first questionnaire (Appendix B) took the form of a straight listing of some 70 to 80 program items under five major headings:

- Curriculum
- Management and Organization
- Instruction
- Education of the Disadvantaged (for elementary and secondary schools)
- Students (for institutions of higher learning)
- Professional Personnel (for the schools)
- Faculty (for the colleges and universities).

The items, like the headings, were varied as appropriate for the school sample and the higher education sample. Respondents were asked simply to indicate by a check mark whether the particular item (1) had been adopted by the school district or institution, or (2) was under consideration for adoption.

The Phase I questionnaire was sent to the superintendents of 1,203 school districts in the country, including districts in each enrollment size category except the smallest (under 300 students), as listed in a directory published by the National Center for Educational Statistics. An appropriately modified version of the school questionnaire was sent to the present or other chief executive officer of all 2,196 institutions

granting recognized associate of arts or higher degrees. Overall, 44 percent of the school districts responded, and 39 percent of the higher education institutions.

From these responses, the innovations listed could be ranked according to the frequency with which they were checked. The higher ranking items under consideration for adoption are those on which information is most likely to be needed and therefore those on which targeted communications should concentrate. To obtain more specific guidance on the kinds of information needed by educational practitioners as they decide on changes and innovations, a second questionnaire form (Appendix C) was sent to a sample of 150 school district respondents from Phase I and to 150 higher education respondents. The former sample represented the same enrollment size categories as in Phase I, and the latter again included the three subsamples of institutions: those granting associate of arts degrees, those granting bachelor's, and those granting master's or higher degrees.

In this second phase, the districts and institutions were presented with a maximum of five higher ranking program items that the Phase I results showed they had adopted, and were asked:

1. To list the specific types of information they had needed
2. To indicate whether that information had been obtained
   a. Locally because only local data were needed, or
   b. Locally because the data were not available elsewhere, or
   c. From outside sources.
3. To show how important the particular type of information had been in making the decision to adopt the particular change or innovation:
   a. Essential, or
   b. Important for making the best decision, or
   c. Useful but not vital.

From these surveys and previous relevant studies, certain conclusions can be drawn about the information needs of educational practitioners, as described below.

Elementary and Secondary Education

In elementary and secondary school districts, the processes of change are usually orderly, and roles in change are clearly understood and specified. The search for information may, however, be somewhat less orderly in some cases, because it is often difficult for those concerned with change to specify information needs precisely or to locate, access, and obtain in suitable formats the information they may have determined to be necessary. The tendency, therefore, is for most individuals to make direct and informal contact with friends or others in the field whom they believe to be knowledgeable regarding the area of interest. Information searchers are particularly eager to obtain direct data on experience from districts similar to their own. The methods used in the study were developed to fill these needs.

Questionnaires were directed to the superintendent in all cases, because he is inevitably a key individual in the change process. In many instances, he filled out the questionnaire himself; in others, he directed it to an assistant superintendent or curriculum or instruction specialist for response. The respondents were asked to put their names on the questionnaire, and many also recorded their positions. This enabled the direction of further inquiries to a specific individual in each district. In general, the short phrases used to describe innovations were understood, so that the respondents were able to indicate adoption or consideration of adoption without ambiguity.

The larger districts generally have adopted more innovations than smaller ones, have the resources and capabilities for specifying, obtaining and using information relevant to change, and can provide more information on the change process. Format and media requirements may vary with enrollment size because of the large districts' greater capability for handling information. In all cases, the preferred source is direct contact with operational or research personnel in other districts. Large districts, however, supplement such contacts with extensive use of printed materials and the development and maintenance of professional libraries. They may also be more likely to use information services such as ERIC, since at least some staff members are familiar with such systems and know how to use them. In addition, the large districts are more likely to be represented at professional meetings where research findings are presented and innovations discussed.

For printed media, there appear to be few generalizations that can be made. Users, however, prefer operationally oriented information and are less interested in the research findings presented conventionally in many professional journals. They like evaluation information, but

may prefer it in non-statistical terms. Clarity and conciseness are of primary importance, along with relevance to operational problems. Users are always pressed for time and want to be able to read and digest material quickly and efficiently. Films, film strips, and tapes may be useful in rounding out the picture with respect to certain innovations, but they are rarely desired as a sole or primary vehicle of information.

One of the most useful features of the survey techniques used is that districts or institutions that have adopted particular innovations are identified, giving the writers of targeted communications knowledge of where to enquire for the operational information they themselves need.

Specification of the exact type of information needed is difficult, but Phase II of the study seems to have provided the kind of general guidance that will help preparers of targeted communications to structure their work. The respondents tended to use the general examples provided, but many gave more specific descriptions as well. The criticality ratings provide guidance as to appropriate emphases in targeted communications. In view of the diversity of information needs where any significant change is contemplated, this general guidance is probably all that can be obtained effectively, even if less simple survey techniques were used.

Higher Education

Information use and roles in change in higher education are a good deal more complex than is the case in elementary and secondary education. The questionnaires were addressed to the president or other chief executive officers of each institution with the request that he direct them to appropriate respondents. The respondents were asked to give their names and positions. The positions ranged from presidents themselves to vice-presidents for academic or administrative affairs, deans, chairmen of faculty committees, faculty members, institutional research personnel, registrars, and controllers. Some individuals in these roles, who were interviewed, indicated that change was often not orderly, but was instituted hurriedly in response to crisis or to pressures from students or alumni. If searches for special information were made, specific needs were usually unformulated, and telephone calls or quick visits to other institutions known to be undergoing some of the same changes were used as a means of getting general information on the problem at issue.

In contrast, some institutions have set up long range planning and institutional research activities to try to anticipate future changes and administrative needs. In these cases, the process is orderly and

the institutions bring to bear their varied research skills in looking for information and in evaluating both the information they do acquire and the changes and innovations that have been started on other campuses. Almost all campuses have the skills to follow this procedure, if they are given the time for systematic planning and implementation. Their libraries provide research reports, and faculty members often travel extensively to professional meetings at which educational innovations are discussed. It seems obvious, nevertheless, that concise and clear reviews of information relevant to particular innovations, as targeted communications are, would be very useful, particularly in those instances for which planning time is limited because of pressures to bring about rapid change.

The procedures used in the study provide both general and some specific guidance for authors of targeted communications, so that they can be prepared for maximum usefulness. As in the case of elementary and secondary education, the indentification of particular institutions with particular innovations already undertaken will greatly assist in preparation of targeted communications.

Media and formats are less critical in the case of higher education than in elementary and secondary education. Personnel in institutions of higher education are usually familiar with search procedures, are able to interpret and evaluate research reports, and can formulate their problems with some precision. They are, however, often pressed for time and readily available reviews would assist greatly in carrying out their tasks.

Recommendations

Elementary and Secondary Education

1. The Survey of Innovative Programs should be used once a year essentially as it was developed for this study. The list of programs should be reviewed before each use so that any to which very limited attention was paid in the previous survey or which appears to be ambiguous on the basis of previous responses can be eliminated or revised. Consideration should be given also to adding categories of substantial interest as indicated either from the responses on previous questionnaires or from other sources.

2. A sample of approximately the size used in this study (1,200) drawn on a stratified random basis for all enrollment size categories except the smallest should be used. The sample is believed to be representative, and the response rate was sufficient to provide enough returns in each category for stability in analysis. A smaller sample would probably still be representative, but there seems to be no good reason for reduction since saving in cost and time would be minimal--the processing of the simple forms either by hand or machine is rapid and efficient.

3. The innovative areas should be ranked in order by frequency of mention in the "considering adoption" category to obtain a clear indication of levels of interest. In addition, projections of the total number of districts potentially interested in each innovation should be computed.

4. The Survey of Information Needs should be used as it was in this study. The forms are simple and clear and do not require excessive time to fill out. They elicit interpretable responses that can be summarized for use by targeted communications authors. The matrix array technique described earlier can be used to choose the sample for the information needs mail-out, since it ensures adequate coverage of all innovation areas of significant interest. The number of districts (150) in the sample also appears to be appropriate and presents no problems either in handling mail-out or processing.

5. Returns on information needs should be summarized in general categories and subcategories with frequency counts, using a standard form for each innovation. These can in turn be further summarized as was done in this report.

6. The question of interviewing or using other direct contact methods should be left open. The interviews conducted as part of this study did not appear to add very much to the information obtained in the mailed surveys, and they are more costly. However, there may be complex subjects on which sound information cannot be obtained except in conversational interchange between respondent and interviewer. In any case, the decision to interview should be made only after the returns from the information needs questionnaires have been summarized and interpreted. At that point it should be possible to determine whether or not additional coverage or depth is required.

7. A minimum of four months should be allowed for completion of both questionnaire procedures, since they are sequential. However, returns for each questionnaire are essentially complete after three to four weeks, so that processing can then be finished with no concern for the few additional ones that may still come in.

Higher Education

1. The Survey of Innovative Programs should be used as it was in this study, with the same kind of review and updating of the list of innovative areas on programs suggested above for elementary and secondary education.

2. A sample of 100 percent was used in this study, because it was unclear at the outset how the institutions could best be categorized. It now appears that the degree categories used are sufficient and, therefore, that the sample size can be reduced. It is recommended that it be reduced by half, to about 1,100 or 1,200 institutions. Selection should be done by taking every second institution on the directory list provided by the National Center for Educational Statistics.

3. Innovative areas should be ranked as they were in this study and projections of potential audiences computed for each of the degree categories and for all institutions.

4. The Survey of Information Needs can be used as it was in this study, with the matrix array technique employed to select both the institutions for the sample and those to which the particular innovation forms are to be sent. The number of institutions to which forms are to be sent should be maintained at 150 in order to ensure adequate coverage, even though the total sample is reduced.

5. Summaries should be prepared as they were for this study, using a standard form for each innovation.

6. As in elementary and secondary education, interviews add very little to the information obtained from the mail-out, but some might be undertaken to supplement the survey responses on more complex topics.

7. A minimum of four months will be required for mailing, processing, and interpreting the two questionnaires for higher education.

Estimated Cost of Future Surveys

Professional Time

Modification of the Survey of Innovative Programs questionnaire can be completed in 80 man-hours; interpretation and write-up of the 1,000 to 1,200 questionnaires (the total number of returns anticipated from schools and institutions of higher education) will require 160 man-hours. Interpretation and write-up of the anticipated 500 Information Needs returns will require 200 man-hours. Total professional time, therefore, is approximately 440 man-hours.

Research Assistance and Clerical Time

Research assistance needed for supervising these mail-outs, and editing and summarizing the returns for all questionnaires is estimated at 140-man hours. Typing and secretarial time for preparing modified questionnaires, addressing envelopes, and typing the write-ups is estimated at 120 man-hours.

Reproduction and Mailing Costs

Reproduction costs, including envelopes and other materials, came to $472 for this study. The suggested smaller mail-out to institutions of higher education would reduce this by a maximum of $100. Postage came to $616 for this study. The reduced mail-out would bring the figure to about $450. Total dollar costs, therefore, would be about $820.

Machine Processing

Machine processing was considered for the survey of innovative programs but, because of the nature of the forms and the required output, it was felt to be only marginally more efficient than hand processing, if at all. This is because all returns must be edited by hand before the data could be punch-carded, and the hand summaries took very little more time than the editing alone. In addition, no complex analyses were

required so that it was not necessary to prepare cards for computer inputs. If cards had been used, however, each return would require two at a cost per card of $0.10. Thus, the punching cost for an anticipated 1,200 returns would be $240. No more than $50 in computer time would be required for the simple tabular outputs required.

Interviewing

Interview costs are difficult to estimate because they are heavily dependent on the amount of travel required and ability to schedule efficiently. If interviews are local, an average of two per day can be scheduled. Thus, each interview requires 0.5 man-days of professional time. Another 0.5 man-days of professional time is required for summarizing and interpreting each interview. Thus, a total of one man day per interview can be estimated. If interviews are conducted in a number of more distant locations, it is often difficult to schedule more than one a day when travel time is taken into account. With summary and interpretation time, a total of 1.5 professional man days per interview may be needed. Subsistence costs may be $20 to $25 per day or per interview in the example given above. Fares vary depending on distance but might run from $300 to $400 per week.

Appendix A

CITED REFERENCES

Appendix A

CITED REFERENCES

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Appendix B

SURVEY OF INNOVATIVE PROGRAMS

SURVEY OF INNOVATIVE EDUCATIONAL PROGRAMS

This questionnaire, on which we ask your cooperation, is a part of a study of the information needs of educators. The results will give direction to the preparation of information summaries called "targeted communications" for use by educational practitioners. The survey will indicate those topics of greatest interest and concern to planners and decision-makers in the education community at the district level. The focus is on innovative programs, but responses need not be restricted to such topics.

Please indicate for each subject area in the space provided on the following page whether (1) your district has adopted, or (2) considered adopting a program in that area in the past five years. Include pilot programs that may have been installed in only a portion of the schools in the district, and any program that may have been adopted on a pilot or other basis and subsequently dropped. In the column indicating consideration of adoption, include only those programs in which interest has been sufficient that staff members were asked to devote some time to investigating the program. Note that space has been provided for indicating any topics not included in the list given.

When the form, including identifying information, has been filled out, please return it to me in the enclosed envelope.

Thank you.

Carl H. Rittenhouse

CARL H. RITTENHOUSE
Senior Research Psychologist

Enclosures (2)
Questionnaire
Return Envelope

SURVEY OF INNOVATIVE EDUCATIONAL PROGRAMS

NAME OF RESPONDENT

DISTRICT NAME District ID No.

DISTRICT ADDRESS

Street City State

GRADE SPAN MAINTAINED TO ENROLLMENT (ADA OR ADM)

Please check the appropriate box for each of the programs listed below which your district has adopted or is considering adopting. Only one check should appear opposite each item. When neither applies, leave the space blank.

	1 ADOPTED	2 CONSIDERING ADOPTION
CURRICULUM		
New Science	—	—
New English Language Arts (Reading)	—	—
New Foreign Language Approach	—	—
New Mathematics	—	—
New Social Sciences	—	—
Family Life and Sex Education	—	—
Drugs and Health	—	—
Environmental Education	—	—
Basic Concepts of American Law	—	—
Open Society Education	—	—
Cultural Enrichment	—	—
Ethnic Studies	—	—
Increasing Vocational Awareness	—	—
New Approaches in Vocational and Adult Education	—	—
MANAGEMENT AND ORGANIZATION		
Systems Analysis	—	—
Information Systems (Data Systems)	—	—
Planning (Financial, Plant)	—	—
Instructional Materials Selection	—	—
Staff Size (Pupil–Teacher Ratios)	—	—
Promotion and Grading Practices	—	—
Program Evaluation	—	—
Assessment (Achievement)	—	—
Problem Diagnosis and Definition	—	—
Establishing Educational Goals	—	—
Participation of Non–educators in School Affairs	—	—
Decision–making	—	—
School Board and Community Relations	—	—
Finance (Budgeting)	—	—
Program Budgeting	—	—
Dropouts	—	—
Change Agents	—	—
Shared Services	—	—
Guidance and Counseling	—	—
Plant and Facilities Utilization	—	—
Student Behavior (Dress, Conduct, Intergroup Tension)	—	—
Student Rights (Due Process; Freedom of Speech)	—	—
Employer/Staff Relations (Negotiations, Employee Rights)	—	—
In–Service Education	—	—
Group Dynamics as a Vehicle for Supervision	—	—
INSTRUCTION		
Flexible Scheduling	—	—
Daily Demand Scheduling	—	—
Programmed Learning	—	—
Instructional Technology (TV, Computer)	—	—
Grouping	—	—
Discovery (Inquiry–Training)	—	—
Individualized Instruction (IPI, CMI, CAI)	—	—
Use of Community Resources	—	—
Language Laboratories	—	—
Team Teaching	—	—
Work–Study Programs	—	—
Multiple Classes	—	—
Simulation and Gaming	—	—
Nongraded Procedures	—	—
Pre–Primary Programs	—	—
Programs for the Gifted and Handicapped	—	—
Deliquency Control Programs (Opportunity Schools, Adjustment Schools, Juvenile Hall Schools)	—	—
Departmentalized Elementary Grades	—	—
EDUCATION OF THE DISADVANTAGED		
Integration	—	—
Teacher Attitudes Toward the Disadvantaged	—	—
Libraries	—	—
Values and Motivations of the Disadvantaged	—	—
Children's Centers	—	—
Migrant Education	—	—
Behavior Modification	—	—
Programs for the Perceptually Handicapped	—	—
English for the Foreign Speaking Child	—	—
Learning Disability Clinic	—	—
Head–Start, Follow Through Programs	—	—
PROFESSIONAL PERSONNEL		
Merit Systems	—	—
Selection of Administration and Instructional Personnel	—	—
Teacher Training and Upgrading	—	—
Evaluation	—	—
Staff Roles and Utilization	—	—
Management Training	—	—
Differentiated Staffing (Aides, Master Teachers)	—	—
Paraprofessionals, Aides, New Careers	—	—
Recruitment and Retention of Educational Personnel	—	—

Please list other new or innovative programs in which your district is involved. Use the back of this page if necessary.

SURVEY OF INNOVATIVE PROGRAMS IN HIGHER EDUCATION

This questionnaire, on which we ask your cooperation, is a part of a study of the information needs of educators. The results will give direction to the preparation of information summaries called "targeted communications" for use by educational practitioners. The survey will indicate those topics of greatest interest and concern to planners and decision-makers in higher education at the institution level. The focus is on innovative programs, but responses need not be restricted to such topics.

Please route the questionnaire to the appropriate individual in your institution for response. For each subject area, he should indicate in the space provided on the following page whether your institution was (1) adopted or (2) considered adopting a program in that area in the last five years. Include programs that may have been adopted on a pilot or other basis and subsequently dropped. In the column indicating consideration of adoption, include only those programs in which interest has been sufficient that staff members were asked to devote some time to investigating the program. Note that space has been provided for indicating any topics not included in the list given.

When the form, including identifying information, has been filled out, please return it to me in the enclosed envelope.

Thank you.

Carl H. Rittenhouse

CARL H. RITTENHOUSE
Senior Research Psychologist

Enclosures (2)
Questionnaire
Return Envelope

SURVEY OF INNOVATIVE EDUCATIONAL PROGRAMS

UNIVERSITY OR COLLEGE _____ University or College ID Number _____

ADDRESS _____

INDIVIDUAL COMPLETING THIS FORM: Name _____

TITLE _____ FULL TIME STUDENT ENROLLMENT _____

HIGHEST DEGREE OFFERED: Associate of Arts ____ Bachelor Degree ____ Master's Degree or above ____

Please check the appropriate box for each of the programs listed below which your institution has adopted or is considering adopting. Only one check should appear opposite each item. When neither applies, leave the space blank.

	1 ADOPTED	2 CONSIDERING ADOPTION
MANAGEMENT AND ORGANIZATION		
Planning, Programming and Budgeting	—	—
Finance–Alternative Funding Patterns	—	—
Governing Board Composition, Functioning, Characteristics	—	—
Specialization in Research or Instruction	—	—
Technical Institutes	—	—
Occupational Orientation	—	—
No Lower Division	—	—
All Graduate	—	—
Library as Central to Education Process	—	—
Decentralization of Student Counseling and Other Student Personnel Activities	—	—
Relationship to Community	—	—
Grading and Other Evaluation Systems – Elimination of Grades and Credits	—	—
Calendar Changes	—	—
Efficient Use of Time and Facilities	—	—
Design of Physical Facilities	—	—
Problem and Policy Oriented Research	—	—
Organization, Personnel and Utilization of Research	—	—
Management Information Systems	—	—
Effects of Shifts in Power Among Boards, Administration, Faculty, Unions, Students, Extra-Institutional Groups	—	—
Accreditation	—	—
Articulation Between Secondary, Junior, Senior College and Graduate Programs	—	—
Economic Returns to Society	—	—
Institutional and Personal Codes of Conduct and Freedoms	—	—
Experimental Colleges	—	—
Overseas Campuses	—	—
Planning Higher Education in Underdeveloped Countries	—	—
Off Campus Activities for Academic Credit	—	—
Use of Student Evaluations of Courses	—	—
Student Participation in Admissions Decisions	—	—
CURRICULUM		
Ethnic Studies	—	—
Vocational Orientation	—	—
Criteria for Degrees	—	—
Interdisciplinary Studies—Breakdown of Department Structure—Centers and Institutes	—	—
Health Education	—	—
Environmental and Ecological Studies	—	—
Population Studies	—	—

	1 ADOPTED	2 CONSIDERING ADOPTION
INSTRUCTION		
Effectiveness	—	—
Remedial Programs	—	—
Student Participation in Planning His Own Program		
Programmed Instruction	—	—
ETV	—	—
Interacting Computer Instruction	—	—
Off-Campus Instruction Community Centers	—	—
Role of Teaching Assistants	—	—
Home Study	—	—
Individual Study	—	—
Work-Study Programs	—	—
Technological Aids	—	—
Preparatory Summer Sessions for Educationally Disadvantaged	—	—
STUDENTS		
Solutions to Dropout Problem	—	—
Predicting Academic Success	—	—
Comparative Data From Other Schools	—	—
The Disadvantaged—Below Median in Tests, Classrank, Family Income	—	—
Selection of Disadvantaged Students	—	—
Admissions' Policy and Student Selection	—	—
Life-Long Education	—	—
Student Concerns, Motivations, Aspirations, Affairs and Characteristics	—	—
Student Aid Formulas	—	—
Test Bias in Student Selection	—	—
Student Destinations	—	—
Impact of Scholarships	—	—
University Policies on Student Living	—	—
Tutoring Minority Students	—	—
FACULTY		
Effectiveness—Productivity	—	—
Unions	—	—
More Emphasis on Teaching in Faculty Reward Systems	—	—
Efficient Utilization of Teacher Resources	—	—
Professional Development	—	—
Values and Interests, Aspirations, Motivations	—	—
Revisions to Tenure Policies	—	—
Student Evaluation of Faculty	—	—

Please list other new or innovative programs in which your institution is involved. Use the back of this page if necessary.

Appendix C

SURVEY OF INFORMATION NEEDS

SURVEY OF INFORMATION NEEDS AND USE

You have previously indicated on the questionnaire sent you recently, in connection with a targeted communications program, that your school district has adopted or has considered adopting the program or programs listed on the following pages. There are separate pages for each program. For the second and final step in our research project on information needs of educators, we ask that you list the types of information or data required or desirable in facilitating your decision-making and planning processes for each program adopted or considered. For each type of information we would like an indication of the source from which it was obtained and the criticality of the information in your decision or planning activities.

The following are some general information categories that you may use as guides. Your information items need not be restricted to these categories since, for any given program, they may not be inclusive.

- Program Description Information
- Planning and Implementation Information
- Personnel Requirements, including Training Information
- Facilities and Equipment Requirements Information
- Financial and Cost Information
- Evaluation Information, including Effects on Students and Staff
- Student Information

The above are only general categories. In writing your information needs, please make them as specific as possible. For example, "cost of computer scheduling" is more meaningful and useful than "financial information."

For each type of information you specify there are three columns under the heading of "Where Was Information Obtained?" If most of the given type of information was generated locally, because only local data was needed, check Column 1. If most of the information was necessarily obtained locally, because it was not available from other known sources, check Column 2. If most of the information was obtained from known external sources, check Column 3. The focus of our research interest is on Column 2, since it is there we can determine what types of information were neither wholly available locally, nor obtainable from known outside sources.

There are also three columns under the heading "How Critical is the Information" in which you should indicate the degree of criticality. If the item was essential in decision-making and planning, check Column 4. If the information was not essential, but decision quality may have been significantly reduced by its lack, check Column 5. If the information was desirable, but not vital, and decision-quality was affected only minimally by its lack, check Column 6.

When you have completed the questionnaire, please return it in the enclosed envelope.

Thank you for your cooperation.

Carl H. Rittenhouse

CARL H. RITTENHOUSE
Senior Research Psychologist

Enclosures

SURVEY OF INFORMATION NEEDS AND USE

District Name

District ID No.

Please write specific information items in the spaces provided. For each item, check in Column 1, 2, or 3 to indicate information source and Column 4, 5, or 6 to indicate criticality.

SPECIFIC TYPES OF INFORMATION OR DATA REQUIRED	WHERE WAS INFORMATION OBTAINED (Check one column only)			HOW CRITICAL IS INFORMATION? (Check one column only)		
	Locally (only local data required)	Locally (because not available elsewhere)	Outside Sources	Must Have to Make Decision	Should Have For Best Decision	Like to Have, But Not Vital
	(1)	(2)	(3)	(4)	(5)	(6)

STANFORD RESEARCH INSTITUTE

MENLO PARK, CALIFORNIA 94025

Dear Sir:

In a previous questionnaire, you indicated that your institution has adopted innovative programs shown on the following pages. We are now asking each institution to provide us with critical information on no more than five programs although most have indicated an adoption rate that exceeds this number.

Please respond to those programs with which you are familiar. However, realizing that you may not have direct access to the information we request on each adopted program, may we ask that you transmit those which may be unfamiliar to you to other staff or faculty members who are more highly acquainted with them?

Also, our project would be greatly facilitated if innovative programs to which responses are made by others at your institution could be returned to you for a single mailing to Stanford Research Institute in the envelope provided.

Sincerely,

Carl H. Rittenhouse

Carl H. Rittenhouse
Senior Research Psychologist

Enclosures

SURVEY OF INFORMATION NEEDS AND USE

You have previously indicated on the questionnaire sent you recently, in connection with a targeted communications program, that your institution has adopted or has considered adopting the program or programs listed on the following pages. There are separate pages for each program. For the second and final step in our research project on information needs of educators, we ask that you list the types of information or data required or desirable in facilitating your decision-making and planning processes for each program adopted or considered. For each type of information we would like an indication of the source from which it was obtained and the criticality of the information in your decision or planning activities.

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- Planning and Implementation Information
- Personnel Requirements, including Training Information
- Facilities and Equipment Requirements Information
- Financial and Cost Information
- Evaluation Information, including Effects on Students and Staff
- Student Information

The above are only general categories. In writing your information needs, please make them as specific as possible. For example, "cost of computer scheduling" is more meaningful and useful than "financial information."

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When you have completed the questionnaire, please return it in the enclosed envelope.

Thank you for your cooperation.

Carl H. Rittenhouse

CARL H. RITTENHOUSE
Senior Research Psychologist

Enclosures

SURVEY OF INFORMATION NEEDS AND USE

Name ID No.

Please write specific information items in the spaces provided. For each item, check in Column 1, 2, or 3 to indicate information source and Column 4, 5, or 6 to indicate criticality.

SPECIFIC TYPES OF INFORMATION OR DATA REQUIRED	WHERE WAS INFORMATION OBTAINED (Check one column only)			HOW CRITICAL IS INFORMATION? (Check one column only)		
	Locally (only local data required)	Locally (because not available elsewhere)	Outside Sources	Must Have to Make Decision	Should Have For Best Decision	Like to Have, But Not Vital
	(1)	(2)	(3)	(4)	(5)	(6)